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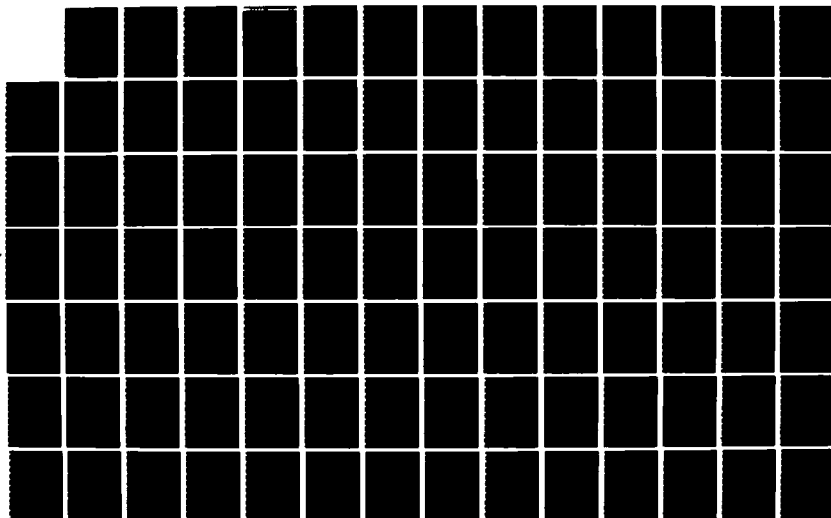
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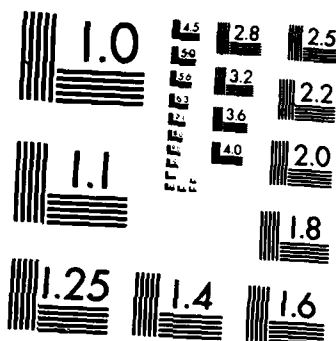
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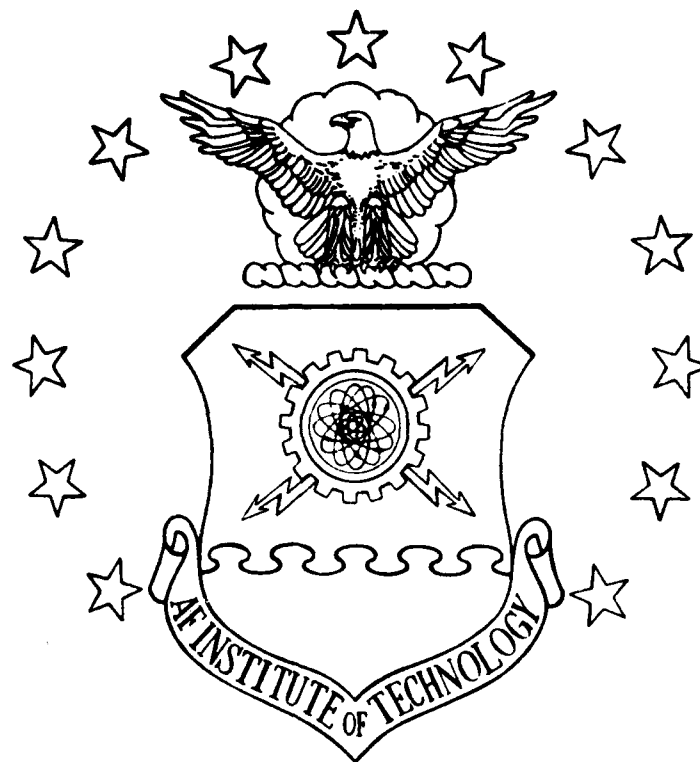




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PSYCHOLOGICAL TYPE AND ANALYSIS OF  
PREFERRED NEGOTIATION STRATEGIES AND  
TACTICS OF UNITED STATES AIR FORCE  
CONTRACT NEGOTIATORS

THESIS

Charan M. Johnstone  
Major, USAF

AFIT/GLM/LSM/36S-36

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PSYCHOLOGICAL TYPE AND ANALYSIS OF PREFERRED NEGOTIATION  
STRATEGIES AND TACTICS OF UNITED STATES  
AIR FORCE CONTRACT NEGOTIATORS

THESIS

Presented to the Faculty of the School of Systems and Logistics  
of the Air Force Institute of Technology  
Air University  
In Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Logistics Management

Charan M. Johnstone, B.A.  
Major, USAF

September 1986

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— Charan M. Johnstone



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Abstract

This study identified the psychological types of contract negotiators and determined whether their preferences for negotiating strategies and tactics, and their perceptions of contractors' tactics, were correlated with their psychological types. From May through July 1986, the Myers-Briggs Type Indicator (MBTI) and a questionnaire asking for rankings of pre-selected negotiating strategies and tactics, and frequency rankings of contractors' tactics, were administered to contracting officers and price analysts assigned to Air Force Systems Command/Aeronautical Systems Division, Wright-Patterson AFB, Ohio. Ninety-nine useful responses from 69 males and 30 females were received. The MBTI results were paired with responses to the questionnaire and the results were analyzed using SPSSx subprograms to conduct chi-square, coefficient of concordance (Kendall W) and correlation (Kendall tau) tests on the data. The MBTI results showed the sample's type distribution was statistically different from the type distribution in the general population. The most frequent type was ISTJ (38.4%), followed by ESTJ (20.2%) and ENTJ (8.1%). The males showed significant overrepresentation of introversion, sensing, thinking and judging types. The females were significantly overrepresented in thinking types.



Significant decrements were noted in types ENFP, ENTJ, ESFJ, ENFJ, ESTP and ESFP. No statistically significant correlation was found between psychological types and preferences for strategies or tactics, or perceptions of contractors' tactics. This may have been the result of the questionnaire, which offered only competitive (win-lose) alternatives to survey participants, thus the range of choices required to detect natural differences as a function of typology was not available for respondents to select. Other possible explanations are the strict legal and regulatory environment in which contract negotiations are conducted and the influence of organizational norms.

PSYCHOLOGICAL TYPE AND ANALYSIS OF PREFERRED NEGOTIATION  
STRATEGIES AND TACTICS OF UNITED STATES  
AIR FORCE CONTRACT NEGOTIATORS

I. Introduction

General Issue

Probably no enterprise is more regulated, monitored, audited, legislated, and adjudicated than government procurement, particularly the acquisition of weapon systems and support requirements by the various components of the Department of Defense (DoD). Not only is the annual DoD budget hotly debated as the major cause of the country's tax woes, but also horror stories relating to misspending of the scarce resources which do survive the budgetary gauntlet make the news with staggering regularity. One has only to recall the spate of investigative horror stories highlighting such blunders in spares buying as \$400 hammers and \$2500 stool caps to re-experience the stinging criticism heaped upon DoD in the early 1980s (38:6).

In the summer of 1983, DoD began several actions designed to restore badly shaken public confidence in the manner in which the military departments spent their authorizations. Defense Secretary Caspar Weinberger issued two letters mandating changes to buying procedures, which came

to be known as the Ten-Point Program and the Twenty-Five-Point Program, initiating sweeping revisions to the way the military departments conducted procurements (31; 38: xiv-xv). The Air Force convened a blue-chip panel of pricing experts who issued 159 changes to the manner in which spare parts alone were purchased (1; 2).

Reforms snowballed thereafter. One Office of Federal Procurement Policy (OFPP) study published in 1984 cited a staggering 35 inspections and audits, 74 policy directives, 15 congressional hearings and committee reports, five bills, 44 executive branch reports, 18 theses and an additional 150 citations ranging from correspondence to newspaper, television and journal articles on the subject of reforming military procurement (38:77-99). Headquarters Air Force Logistics Command found it necessary to employ an analyst to monitor the proliferation of reform initiatives--which numbered over 4000 separate pieces of legislation by late 1985 (17; 40). It is difficult to imagine any other business endeavor which receives more intense scrutiny than that conducted by the people whose jobs are to spend the dollars allocated to the nation's defense.

These revisions coincided with the 1984 passage of the Competition in Contracting Act (CICA, Public Law 98-369), created to remedy acquisition foibles by mandating new competitive policies. CICA was implemented on 1 April

1985 in the Federal Acquisition Regulation (FAR), which one year earlier had unified in one document all previously disjointed guidance relating to federal procurement. Under CICA, competitive procurement by sealed bid, which FAR refers to as formal advertising, is parallel to competitive proposals, and the 17 exceptions which had previously allowed noncompetitive negotiations were shaved to seven (30:5-15). Noncompetitive negotiation, which had for years accounted for the lion's share of military spending, was to become a minority type of procurement, and competitive negotiation was elevated to a par with sealed bid procedures (5:2; 30:5-15).

In negotiations, the individual who has authority to bind the government is the warranted contracting officer or his designated official. Seldom does a contracting officer negotiate without the input of technical specialists, often comprising a dedicated team, whose expertise ranges from industrial engineering to property management (6:7A8-7A13). Not until a coordinated position among these experts and management is achieved does the contracting officer hammer out an agreement with a contractor in negotiations. It is an exceptionally complex procedure conducted in full view of exacting internal critics as well as vocal external critics.

Because of the large dollar amounts involved and the intensity of the scrutiny focused upon the outcome of

the contracting officers' negotiations, the negotiating skills of the USAF negotiator are extraordinarily significant. As Catlin and Faenza remark in their study,

It is during negotiations, when DoD contract specialists go head-to-head with highly skilled contractor negotiators, that . . . billions of dollars are committed to the purchase of military weapons and supplies.  
(5:2)

### Problem Statement

Within the Air Force, little documentation exists addressing the strategies and tactics used by Air Force contract negotiators to arrive at fair and reasonable settlements. One exception is a 1985 thesis by Catlin and Faenza, who found statistically significant preferences among some Air Force Systems Command (AFSC) buying division negotiators in the realm of strategies and tactics (5:34-90).

When Air Force negotiators enter a bargaining situation, they have planned, coordinated and briefed their agendas not only to a team of functional specialists but also to many levels of management. Based upon the complexity of the problems confronting them, they have devised a strategy composed of discreet tactical maneuvers designed to achieve contract terms and conditions at a price which is fair and reasonable for both parties (6:7A7-7A17).

The negotiation itself consists of behaviors and verbal messages which can be understood by the parties to convey a variety of meanings as a function of differences

in perception, modes of perceiving and processing data, and communication (15:55-132; 20:77-90,120-122; 27:157-182). The negotiation and conflict literature recognizes the effect of perceptions and personality on individuals' understanding and conduct of the complicated communications that occur at the negotiation table (27:259-278; 47:913-914,930).

One possibility for describing the effect of conceptual differences on the negotiation process is to use the Myers-Briggs Type Indicator (MBTI) to determine the psychological types of Air Force negotiators and whether strategic and tactical preferences can be related to their cognitive styles. If an influential relationship between psychological types and negotiation styles exists, then the negotiators' type can be selected or adapted to suit the unique aspects of a particular negotiation and, hence, to facilitate attaining regulatory constraints and Air Force objectives (35:209-210; 51; 52). Knowing the psychological types of Air Force negotiators sheds light upon their preferred modes of perception, internal mental processes and external relations with others, which could help clarify the negotiation outcome and better manage USAF acquisition resources.

#### Background

Contract work requiring negotiation includes a broad range of actions from initial price, terms and conditions to adjustments, changes in any specified element,

termination settlements and property disposal (32:9-10). Work within a contracting unit is assigned among price analysts, contracting officers and their designated representatives on the basis of number of cases or primary responsibility for specific contracts, usually within the domain of a weapon system or subsystem, or type of effort or equipment involved.

Other considerations include experience and pay grade of price analysts and contracting officers, number of cases or contracts on a desk, complexity and type of contractual action, and dollar value of the action. If the information were available to management for use in assigning negotiation work, the psychological types of the price analysts and contracting officers, and their preferred negotiation techniques, also could be considered as factors.

Theory exists to permit describing the psychological types of individuals and their consequent modes of understanding themselves and their environments (18:178-269; 35:53-125). Within the work setting, significant relationships occur between psychological type and the manner in which individuals prefer to accomplish their work, as well as the type of work which they do well (22:129-166; 34:77-93; 35:157-174).

The MBTI is used to determine persons' preferred styles of recognizing and processing information and these classify their psychological types (35:1-10). MBTI results

have been successful not only in counseling situations involving close human relationships, but also in determining the communication preferences and difficulties of the types (34:63-93; 35:208-210; 51:30-48; 52:5-23). Type theory may be applicable to the manner in which individual negotiators prefer to approach the complex negotiation arena and could be useful to the negotiator in adjusting his/her negotiating techniques to compensate for differences with the opposing negotiator, hence increasing the likelihood of all parties understanding and achieving agreement (18; 23; 24; 25; 27; 51; 52).

Negotiators are marked by behaviors and verbal messages which must be transmitted, perceived and mutually understood to be effective (15:55-132; 27:157-182). The literature recognizes a person's background and personality influence what will be said and heard and done by all parties to a negotiation (35:164-169; 47; 48; 50). So do his perceptions and modes of understanding what he hears and sees (15:55-83; 27:168-169). A negotiator's effectiveness may be viewed as his ability to influence the perceptions of his opponent as well as to correctly apprehend what he is experiencing himself (20:55-76; 27:183). The eventual outcome of a negotiation must commit to written contract the intricate complexities which are discussed by negotiators--and communication, with its antecedent perception, is the common thread in the process. According to Lewicki and Litterer,



Communication is at the heart of the negotiating process. While planning, prework, evaluating the bargaining situation, and strategizing are all key elements to the diagnosis and understanding of negotiation, communication is the central instrumental process. Unless negotiators deal with one another strictly by trading bids and offers on slips of paper, communication processes, both verbal and nonverbal, are critical to the achievement of negotiating goals. (27:157)

A theory which facilitates the understanding of how differing individuals perceive, process, and communicate information is useful to negotiators and to the artful conclusion of negotiations (24:971-980; 27:157-182). The theory underpinning the MBTI permits this understanding as well as the adaptations which may be necessary to communicate across differences and attain settlements (51; 52).

#### Research Objective

The objective of this research is to determine the psychological types of Air Force contract negotiators and price analysts and to determine if a correlation exists between psychological type and preferred negotiation strategies and tactics.

#### Research Questions

The research objective will be met by addressing these research questions:

1. Does a definitive pattern of psychological type exist among contracting officers and price analysts?

Research hypothesis:

$H_o$ : Psychological type distribution of contracting officers and price analysts is the same as that of the general population.

$H_a$ : Psychological type distribution of contracting officers and price analysts is different from that of the general population.

2 Does a definitive pattern of negotiation strategies exist among the contracting officers and price analysts relating to their psychological types?

Research hypothesis:

$H_o$ : There is no pattern of preferred negotiation strategies among contracting officers and price analysts related to their psychological types.

$H_a$ : There is a pattern of preferred negotiation strategies among contracting officers and price analysts related to their psychological types.

3. Does a definitive pattern of negotiation tactics exist among contracting officers and price analysts relating to their psychological types?

Research hypothesis:

$H_o$ : There is no pattern of preferred negotiation tactics among contracting officers and price analysts related to their psychological types.

$H_a$ : There is a pattern of preferred negotiation tactics among contracting officers and price analysts relating to their psychological types.

4. Does a definitive pattern of perception of contractor tactics exist among contracting officers and price analysts relating to the psychological types of negotiators?

### Research hypothesis:

H<sub>0</sub>: There is no pattern of perceived contractor tactics among contracting officers and price analysts related to the psychological types of the negotiators.

H<sub>a</sub>: There is a pattern of perceived contractor tactics among contracting officers and price analysts related to psychological types of the negotiators.

Answers to these questions will be determined by conducting a stratified random sample composed of 50 percent of all assigned civilian employees in the 1102 series in pay grades ranging from GS-07 through GM-15 assigned to AFSC Aeronautical Systems Division (ASD) at Wright-Patterson AFB, Ohio. The survey will consist of two instruments: the MBTI and a questionnaire on negotiation strategies and tactics. Results will be analyzed for a statistically significant relationships between reported preferences in psychological types and negotiation strategies and tactics using the primary cognitive distinctions of psychological type theory. Inasmuch as strategies and tactics may be tailored to the opposing negotiator, perceptions of the contractor's tactics also will be analyzed. Demographic data will be collected and summarized.

### Assumptions

The following assumptions were made in conducting this research. First, it was assumed that a stratified random sample of the price analysts and contracting officers at ASD would obtain statistically valid responses for

that population. Second, the questionnaire on strategies and tactics, which was based upon previous research, was assumed to be valid. Third, the researcher assumed that the MBTI, which is extracted from theory of psychological types advanced by psychiatrist Carl G. Jung, would yield theoretically correct and accurate self-reported data. Fourth, the data banks at the Center for Applications of Psychological Types (CAPT) were assumed to be representative of the general population and persons working as managers, respectively, so that comparisons could be made. Because of the personal nature of the MBTI results, participants were guaranteed that their identities would be confidential.

#### Limitations

Since survey participants were selected from one Air Force buying activity only, no generalizations may be made to other Air Force or government negotiators, nor to government negotiators who are serving in the military on active duty. The survey population was restricted to civilian contracting officers and price analysts to facilitate stability for future research. Results cannot be generalized to non-government civilians, such as negotiators who work for the defense industry.

## II. Literature Review

A person's day-to-day transactions form strong habits that are likely to be carried into the negotiating session.

— Gordon F. Shea (42:192)

This literature review introduces the theory of psychological types as developed by noted psychologist Carl G. Jung and operationalized by Katherine Briggs and Isabel Briggs Myers. The literature which integrates type theory with interpersonal communications is discussed. Type theory is integrated with theory on negotiation in the context of the behavioral sciences' treatment of conflict models. Finally, an overview of Department of Defense research on negotiations as relates to negotiation behavior is presented.

### Jung's Theory of Psychological Types

Published in 1921, Carl G. Jung's Psychological Types summarizes over twenty years of his clinical observations (13:96). In this work, Jung advanced his method of classifying personalities by paired diametric opposites of characteristics broadly described as attitudes and functions. The former category, attitudes, captures how an individual relates to tangible objects in his external environment as well as intangible things, such as thoughts,

within his inner mental world. Attitudes are the direction of thought and are objectively or subjectively oriented. Functions include conscious and unconscious mental processes, both rational and irrational, which the individual employs in conjunction with his attitude. Rational processes are those that order and judge perceptions, hence making them meaningful. The converse functions work to do the perceiving and, because they tie the mind directly to impressions without an interpretive process, Jung terms them irrational--not requiring reason (28:299).

Jung identified two basic psychological types which he termed "attitude types," distinguished by the orientation of their interests as extraverted or introverted (18:178). Within each of the two basic types are four special types, described by their predominant mental processes, which he termed "function types" (18:178). In total, Jung described eight psychological types, each comprised of an attitude and a rational or irrational function.

Attitude is comprised of extraversion (objective orientation) and introversion (subjective orientation). Rational functions include thinking and feeling; irrational functions include sensing and intuiting. Hence, the eight types are extraverted thinking, extraverted feeling, extraverted sensing, extraverted intuiting, introverted thinking, introverted feeling, introverted sensing, and introverted intuiting. Each type is discussed briefly in

Appendix A. According to Jung's system of classification, the full range of variety in human personalities, including pathological thinking and behavior, can be attributed to the interaction of attitude and function within the psyche.

The Attitude Types--Extraverted and Introverted

Attitude describes the continuous adaptation and consequent modification of the individual in relation to objects (18:180). Jung's two modes of attitude, extraversion and introversion, are mutually exclusive at any one time. Because Jung found extraverted and introverted types randomly distributed throughout the population regardless of age, gender, social class or education, he believed the attitudes to have a biological foundation (18:180). A person's selection of one attitude over another is independent of external conditions, and Jung therefore termed it an hereditary, inborn psychic disposition of the individual, which manifests itself as early as infancy (18:181,232).

The Extraverted Type. The extraverted type denotes a person who embraces objects with his total available psychic energy and will, which Jung terms "libido" (distinct from the Freudian notion of libido, a far narrower view consisting of sexual drive only). According to Jung,

The extravert . . . has a positive relation to the object. He affirms its importance to such an extent that his subjective attitude is constantly related to and oriented by the object. The object can never have enough value for him. . . . (18:179)

In the extravert, conscious, intentional psychic energy is dominated by objective reality.

His interest and attention are directed to objective happenings, particularly those in his immediate environment. . . . The actions of the extravert are recognizably related to external conditions,

says Jung (18:183).

The Introverted Type. Conversely, the introverted type withdraws from objects in an attitude of abstraction to conserve his psychic energy. Jung says,

The introvert's attitude is an abstracting one; at bottom, he is always intent on withdrawing libido from the object as though he has to prevent the object from gaining power over him. (18:179)

The introverted type is absorbed by his subjective reality and the object assumes relatively little importance. This is not to say introverted consciousness does not acknowledge objective facts. It does. However, the introverted consciousness imposes a filter or "subjective view" between perception of the object and the individual perceiving. In other words,

. . . the introverted consciousness is naturally aware of external conditions, [but] it selects the subjective determinants as the decisive ones. It is therefore oriented by the factor in perception and cognition which responds to the sense stimulus in accordance with the individual's subjective disposition. (18:229)

#### The Function Types--Rational and Irrational

As noted, extraversion and introversion pair with a dominant function, either rational (thinking or feeling),



or irrational (sensing or intuiting). The dominant function, whether rational or irrational, gains acceptance in the conscious activity of the individual.

Whatever function the extraverted type chooses to dominate his pattern of conscious thought is noticeably colored by his total fascination with objects. The unconscious activity of extraverted types is complementary to the conscious and thereby assumes a "definitely introverted character," meaning a subjective character, according to Jung (18:187).

Whatever function the introverted type develops as the dominant conscious mental process is inevitably laden with subjective content. The unconscious process maintains balance in the subject by being object oriented and relatively extraverted, thus providing psychic complementarity or balance (18:235-237).

#### The Rational Functions--Thinking and Feeling.

Thinking is rigorous reasoning from cause to effect. It is dominated by principle and draws intellectual conclusions based upon evidence. Extraverted thinking is object oriented and directed toward exterior conditions, thus it assumes a factual and practical bent. Introverted thinking "is neither determined by objective data not directed to them; it is a thinking that starts from the subject and is directed to subjective ideas or subjective facts," while

nevertheless passing through objective data enroute, thus it produces new views and visions (18:195).

Feeling is the assignment of meaning and value. It produces priorities or rational hierarchies among things and thoughts, thus orders reality by such subjectiveness as "right," "good," and "beautiful" or hideous" (18:207). Extraverted feeling is ruled by objects; introverted feeling is centered within the subject and is, therefore, abstracted from the object (18:207-209; 247-250). In either attitude, feeling excludes thinking, because it is heavily value-laden, versus logical and intellectual.

#### The Irrational Functions--Sensing and Intuiting.

The sensory function is perception by way of the five senses--seeing, hearing, touching, feeling and smelling. Extraverted sensing is focused upon and conditioned by the object; introverted sensing centers upon the "subjective component of perception" and is only secondarily influenced by the object (18:217-220,252-254). The extraverted sensor is unsurpassed for practical, objective facts; the introverted sensor is more inclined to apprehend the larger background of the objective facts rather than the facts themselves.

Intuition is perception by way of hunch or imaginative speculation (22:19). Intuition excludes sensing in most individuals. It focuses upon possibilities and is future oriented. Its primary distinction in the

extraverted attitude is its focus upon external objects for their potential to open new avenues of action. In the introverted attitude, intuition focuses upon the internal, subjective reality for its potential to yield new images and archetypes (18:220-222,258-259).

### Dominant and Auxiliary Functions

Jung readily admits the types do not occur in their pure forms, but rather their dominant functional descriptors are accompanied by "another, less differentiated function of secondary importance [which] is invariably present in consciousness and exerts a co-determining influence" (18:266). This he terms the auxiliary function. As a rule, said Jung, "besides the conscious, primary function there is a relatively unconscious, auxiliary function which is in every respect different from the nature of the primary function" (18:268).

The most differentiated function is distinguished from the auxiliary by its primacy or sovereignty in its influence upon the thinking and behavior of the normal individual, which is so thorough as to preclude any other function from gaining equal importance. The dominant function is also the most conscious:

. . . the products of all functions can be conscious, but we speak of the "consciousness" of a function only when its use is under the control of the will and, at the same time, its governing principle is the decisive one for the orientation of the consciousness. (18:266)

### Summary of Jung's Psychological Types

Jung theorized the existence of two basic psychological types which are distinguished by their attitudes, the extraverted type, which is object-oriented, and the inverted type, which is subject-oriented. Within each type are four further subgroups characterized by type of mental process, rational or irrational. The rational types are thinking and feeling, the irrational types are sensing or intuiting. Jung also discussed the existence of a dominant and an auxiliary function, which is entirely different from the dominant function. These two functions work together and provide people both a perceiving and a judging capability. Although it is central to Jung's theory that an individual's behavior is related to his type, he never became deterministic in his descriptions.

Jung's theory was operationalized by two researchers, Katherine Briggs and her daughter, Isabel Myers, who extended his writing on dominant and auxiliary functions to produce a systematic psychological type theory which integrated the primary and secondary functions. These pioneers developed an instrument which, today, is widely applied as a personality inventory. This instrument describes an individual's behavior within type theory and has been applied in research settings to learn more about how people conduct their interpersonal relationships such as negotiating.

### The Myers-Briggs Type Indicator

General. Isabel Briggs Myers began working on the development of an instrument to portray individuals' preferences for introversion or extraversion, as well as to capture functional preferences, in 1942 (35:xiii). The result, known as the Myers-Briggs Type Indicator (MBTI), is founded upon and completely accepts Jung's typology.

Myers' fascination with Jung's theory of type paralleled that of her mother, and much of the pioneering development of the indicator was accomplished as a mother-daughter partnership during the years spanning World Wars I and II. The consequent practical thrust of the MBTI was largely motivated to explain and soothe a troubled world: "The suffering and tragedies of the war stirred Myers's desire to do something that might help peoples understand each other and avoid destructive conflicts" (35:x). Hence the Myers-Briggs application of Jung's typology is geared to assist individuals in the normal conduct of their lives--in understanding learning style, occupation, marriage, and personal development.

Myers found much of the seemingly random variation in normal personalities to be quite orderly and predictable when viewed in the context of Jung's theory of typology, and purposed to make the variation understandable as a function of types of mental processes. She extended Jung's typology by integrating his theory of dominant and auxiliary

functions with extraverted and introverted attitudes, and developed a methodology to determine whether individuals are more oriented toward Jung's rational (thinking-feeling) or irrational (sensing-intuiting) functions. Her work, described in Gifts Differing, culminates a lifetime of research and spanned three generations of her own family (35:xiii).

The mental processes described by Myers parallel Jung's functions and are called "perceiving," which is the process of how individuals receive external and internal data (Jung's irrational functions), and "judging," which is how individuals impart meaning or come to conclusions about their perceptions (Jung's rational functions).

Together, says Myers,

. . . perception and judgment, which make up a large portion of people's total mental activity, govern much of their outer behavior, because perception--by definition--determines what people see in a situation and their judgment determines what they decide to do about it. (35:1)

Extraversion/Introversion. Extraversion and introversion are denoted by Myers as E and I respectively, and these are understood, as defined by Jung, to be the direction of an individual's thought processes or orientation to life (35:7). Extraversion is centered on exterior reality and environment; introversion is the opposite of extraversion and is grounded upon the inner world of ideas and concepts.

Perception--Sensing/Intuiting. In consonance with Jung's definitions, Myers understood the perceptive modes (sensing and intuiting) to be opposites. Sensing refers to data received by the five senses, and intuiting as "indirect perception by way of the unconscious, incorporating ideas or associations that the unconscious tacks on the perceptions coming from the outside" (35:2). The perceiving modes are denoted by S for sensing and N for intuiting.

Judging--Thinking/Feeling. The judging modes, thinking and feeling, are denoted by Myers by T for thinking and F for feeling. Thinking produces conclusions as a result of a logical process regarding cause and effect, and feeling bestows upon perceptions a personal, thus subjective value (35:3).

Judgment/Perception Preference. Only one function may be dominant to the individual. Both Myers and Jung agree that the personality suffers when two functions are preferred equally (35:12). Accordingly, Myers developed a judgment-perception preference indicator to point to which function an individual chooses to dominate his mental processes.

Judgment-dominated individuals, denoted by a J, live their lives in a closure-seeking mode (35:8-9). They are distinguished by the primacy of their preferred judging function, thinking or feeling.

Perception-dominated types, denoted by a P, choose to remain open to incoming evidence and resist closure (35:8-9). They are distinguished by the primacy of their preferred perceiving function, sensing or intuiting.

Description of Myers-Briggs Typology. In all, the Myers method of denoting typology is shown in Table 1.

TABLE 1  
DESCRIPTION OF THE FOUR PREFERENCES (35:9)

EI	Extraversion or Introversion	Attitude of dominant process--outer or inner focus
SN	Sensing or Intuition	Type of perception preferred--object or subject oriented, respectively
TF	Thinking or Feeling	Type of judgment preferred--logical or value oriented, respectively
JP	Judgment or Perception	Identity of the extraverted function--judgment or perception, how the person deals with the outer world

#### The Function Pairs

Unlike Jung's pure types, the Myers-Briggs types take account of the pairing of dominant and auxiliary functions, which Jung's system explicitly acknowledged but did not define. The dominant and auxiliary pairs are composed of a perceptive mode and a judging mode. Together the dominant and auxiliary functions form four possible pairs as follows: ST, sensing plus thinking; SF, sensing



plus feeling; NT, intuiting plus thinking; and NF, intuiting plus feeling (35:4).

In all, the perceiving-judging combinations, and the interaction of these pairs, produce personalities that differ in terms of interests, values, needs, habits of mind and observable surface traits (35:4). Myers provides the following descriptions of the types by function pairs.

#### Sensing plus Thinking

The ST (sensing plus thinking) people rely primarily on sensing for purposes of perception and thinking for purposes of judgment. Thus their main interest focuses upon facts, because facts can be collected and verified directly by the senses--by seeing, hearing, touching, counting, weighing, measuring. ST people approach their decisions regarding these facts by impersonal analysis, because of their trust in thinking, with its step-by-step logical process of reasoning from cause to effect, from premise to conclusion.

#### Sensing plus Feeling

The SF (sensing plus feeling) people, too, rely primarily on sensing for purposes of perception, but they prefer feeling for purposes of judgment. They approach their decisions with personal warmth, because their feeling weighs how much things matter to themselves and others. They are more interested in facts about people than in facts about things and, therefore, they tend to be sociable and friendly.

#### Intuition plus Feeling

The NF (intuition plus feeling) people possess the same personal warmth as SF people because of their shared use of feeling for purposes of judgment, but because the NFs prefer intuition to sensing, they do not center their attention upon the concrete situation. Instead they focus on possibilities, such as new projects (that haven't ever happened but might be made to happen) or new truths (things that are not yet known but might be found out). The new project or the new truth is imagined by the unconscious processes and then intuitively perceived as an idea that feels like inspiration.

### Intuition plus Thinking

The NT (intuition plus thinking) people also use intuition but team it with thinking. Although they focus on a possibility, they approach it with impersonal analysis. Often they choose a theoretical or executive possibility and subordinate the human element. NTs tend to be logical and ingenious and are most successful in solving problems in a field of special interest, whether scientific research, electronic computing, mathematics, the more complex aspects of finance, or any sort of development or pioneering in technical areas. (35:4-6)

The Dominant/Auxiliary Functions within the Function Pairs. Either judging or perceiving can be dominant as a result of the individual's preference. Whatever the dominant mode, the auxiliary buttresses it by providing needed support and balance from the opposite function type.

Individuals are not exclusively introverted or extraverted, although their preference is similar to right or left handedness. They develop limited ability in their opposite attitude through their auxiliary function. If the dominant attitude is extraversion, the auxiliary function operates in an introverted manner. Likewise, if the dominant attitude is introversion, the auxiliary function operates in an extraverted manner. For the introverted types, the auxiliary provides a much-needed bridge to the outside world.

Myers likens the working of the dominant and the auxiliary functions to the behavior of a general and his aide (35:14-15). The simile is quite apt, and therefore is

reproduced herein for clarification. The general is the dominant function, the aide is the auxiliary function. In an extraverted type, the general and his aide work together with the general in public view, and the aide in the background. The general makes important decisions in a manner that can be seen by an outsider, and the aide is seldom called upon to assist in public. In the introverted type, the general and the aide swap places. The general remains in the background, in the words of Myers, in the tent, and the aide conducts the public business of the individual. As with the extraverted type, the general is in charge, but his presence is not visible to the outside observer. Instead, the introverted type conducts his public relations with the aide--the auxiliary function. The general--the dominant function, is not plainly visible unless unusual circumstances prevail.

In the extraverted type, the general (the dominant function) is extraverted, and the aide (the auxiliary function) is introverted. In the introverted type, the general (again the dominant function) is introverted, and the aide (again the auxiliary function) is extraverted. In both instances, the aides, symbolic of the auxiliary functions in individual types, are the bridge for the individual over the gulf that otherwise separates the extravert from the world of ideas and the introvert from the world of exterior objects.

Determining the Dominant/Auxiliary Function. The judgment-perception (J-P) preference is the key to whether perception or judgement, is dominant in the extraverted or introverted type (35:8). This preference indicates which function an individual type uses to relate to the outer world; in short, which function is extraverted.

An extraverted type whose judgment is dominant--therefore extraverted as the individual type is extraverted, is denoted by a J (judgment). This means the auxiliary perceptive function, sensing or intuiting, is introverted. The extraverted type whose perception is dominant--therefore extraverted as the type is extraverted, is denoted by a P (perception). This individual's auxiliary judgment function, thinking or feeling, is introverted.

The formula changes for the introverted type, in which case it is most helpful to recall the simile of the general and the aide. The introverted type lives his public life in his auxiliary mode--his secondary function is extraverted, and his dominant function is "stubbornly introverted" (35:14). Thus, an introverted type denoted by a J extraverts with the judgment function, either thinking or feeling. In this type, the dominant, thus introverted, function is perceptive. Likewise, an introverted type denoted by a P extraverts with his aide, the perceptive function, sensing or intuiting. In this type, the dominant, introverted function--the general in the tent--is judgment, thinking or feeling.

The Sixteen Types of Myers-Briggs Typology. The Myers extension of Jungian typology yields 16 possible combinations of psychological type from the original theoretical eight defined by Jung. This results from Myers' differentiation among the possible combinations of dominant and auxiliary functions and the manner in which these pairs interact (35:21). Myers' Type Table, displaying all 16 types, with the dominant function underlined, is shown in Table 2.

TABLE 2  
THE 16 TYPES AND THEIR DOMINANT PROCESSES (35:16)

IS <u>T</u> J	IS <u>F</u> J	IN <u>F</u> J	IN <u>T</u> J
IS <u>T</u> P	IS <u>F</u> P	IN <u>F</u> P	IN <u>T</u> P
ES <u>T</u> P	ES <u>F</u> P	EN <u>F</u> P	EN <u>T</u> P
ES <u>T</u> J	ES <u>F</u> J	EN <u>F</u> J	EN <u>T</u> J

#### Type and Occupation

A person's choice of occupation is largely governed by his psychological type and hence the MBTI has shown much promise in occupational counseling (35:157). The perceiving choice, whether dominant or auxiliary, has the most impact on what interests people and therefore plays the greatest role in an individual's selection of occupation (35:158). The next most important factor is the judging function, thinking or feeling (35:158). According to Myers, "Each of

the four possible combinations of perception and judgment tends to produce distinct interests, values, needs and skills" (35:158). Myers' assessment of the impact of these factors is displayed in Appendix C.

The sensing type's characteristic fascination with facts and logic are evident in the STs' representation in occupations requiring impersonal, precise skills with objects and money, such as accounting, finance, commerce, and banking (35:158). Sensing-feeling types are more attracted to fields in which they can be of service to others, thus are generously attracted to sales, nursing, education and community service (35:159). Sensing types need security and predictability in their work environments (35:157). The converse is true of intuitive types, who much prefer a challenging work sphere in which they may be creative and original (35:157). Intuitive thinkers like work that offers possibilities and they handle these impersonally, logically, and ingeniously. NTs are attracted to scientific research and fields such as mathematics and architecture (35:157,158-160). NFs, too, like possibilities, but approach them with "warmth" and personality (35:160). These types are attracted to health professions, writing, and counseling professions, and frequently to theology, where their communication skills can shine (35:160).

The preference for extraversion and introversion affects whether an individual is more comfortable in a dynamic world populated by active objects (extraverted types) or a serene world populated by "concepts and ideas" (introverted types) (35:161). This preference has been found to have a high correlation with turnover; extraverted types are twice as likely to depart quiet jobs as they are active jobs; the converse is true of introverts (35:161).

The judging or perceiving preference has been linked to job satisfaction and governs whether an individual prefers "organized, systematic, and foreseeable" work patterns (such as S-J types) or flexibility (such as N-P types) (35:162).

In all, an individual's preferences in the work setting influence his adaptation to the job and his performance. Consequently, many companies have successfully adopted the MBTI as a consideration when making personnel placements and work unit assignments (35:167-172).

#### Type and Communication

When two people reach a deadlock over the handling of a given situation, the trouble may be a result of their difference in type, which has interfered with their communication. . . . The difficulties for any type are likely to lie in the fields belonging to that type's least skilled processes.

— Isabel Briggs Myers (35:118)

General. Because "communication is at the heart of the negotiation process" (27:157), the implications of type theory upon the communication process, as well as the abilities of the negotiation team members to communicate internally, are significant. Myers stated, and research has confirmed, that each type has a communication style which is preferred, and this style is the manner in which the type communicates most effectively (35:118; 51; 52).

Communication, and settings requiring communication, have been studied in the context of psychological type by a number of researchers. All findings confirm that communication within the context of interpersonal relationships, including within the work setting, is most satisfactory when the parties are similar in type and are aware of the legitimate differences caused by type dissimilarities (14:512-514; 51:30-48). According to Flavil R. Yeakley, Jr., of the University of Tulsa, who has accomplished or reviewed much of the communications research on psychological type,

Two people must use the same communication style at the same time in order to communicate effectively. This often requires some communication adjustment on the part of one or both of the individuals involved. (52:15)

Yeakley found the most important factor in communicating to be the "degree of similarity in function regarding communication style preferences," not the similarity



in the MBTI designators alone (51:31). Here, Yeakley uses the word "function" to refer to perceptive and judgment processes--sensing or intuiting, thinking or feeling. Each psychological type uses all four processes, but not with equal skill or familiarity (51:31-32). The most preferred mode of communication is the function with which an individual type relates to the exterior environment, the dominant function for an extravert, and the auxiliary function for an introvert (51:32).

Tertiary and Inferior Functions and Communication.

In Myers' theory of psychological type, the 16 psychological types are distinguished by dominant and auxiliary functions. In addition to these two discriminators, each type has a unique pattern of third and fourth most preferred functions, which Myers refers to as tertiary and inferior functions (34:18). Yeakley contends these ranked preferences, dominant through inferior, likewise determine the interior ranking of an individual for differing communication styles (51:32; 52:5).

In the extraverted individual, the dominant function is the most preferred communication style, followed by the auxiliary or secondary function. The extraverted type's tertiary style is the opposite function of the auxiliary, and the inferior style is the opposite function of the dominant. Thus, for an ESTJ, for example, the dominant style is thinking and the auxiliary style is

sensing, corresponding to the modes with which the individual relates to the exterior world. This type's tertiary style is intuiting (the opposite function of the auxiliary function), and his least preferred, thus inferior style, is feeling, the opposite function of the dominant function. His communication preference is described in order of rank as TSNF (34:18; 51:32-33).

Ranking differs for the introverted types because they use their auxiliary functional preference to conduct relations with the external world. In the introverted individual, the extraverted function, in which mode the introvert relates to others, is his auxiliary function. This is the introverted type's top ranked communication style. His second ranked mode is his dominant function, followed by the opposite function of the auxiliary as tertiary, and the opposite function of the dominant as the least preferred or inferior. Thus, an ISTJ, for example, uses thinking as his primary mode of communicating, followed by sensing. These correspond to the type's auxiliary and dominant functions used in relating to external reality. The ISTJ's tertiary style is feeling (the opposite of the auxiliary), and the least preferred or inferior style is intuiting, the opposite of the dominant style. The ISTJ's communication preference is described in order of rank as TSFN (34:18; 51:32-33).

To recap, the communication preferences, thus relative skills in communicating, of the differing psychological types are shown in Table 3.

TABLE 3  
COMMUNICATION PREFERENCES OF THE TYPES (51:33)

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<u>Extraverted Type</u>
First--dominant
Secondary--auxiliary
Tertiary--opposite of auxiliary
Inferior--opposite of dominant
<u>Introverted Type</u>
First--auxiliary
Secondary--dominant
Tertiary--opposite of auxiliary
Inferior--opposite of dominant

---

Using this functional ranking, Yeakley constructed a table of the 16 psychological types' communication preferences, corresponding to Myers' priorities and direction of functions in each type. He also constructed a table of opposite psychological types, types which would experience the maximum difficulty communicating, based upon interpersonal communication preferences and skills as shown in Table 4.

TABLE 4  
OPPOSITE TYPES IN COMMUNICATION (52:21)

ESTJ--ENFJ	ESFJ--ENTJ	ISTJ--INFP	ISFJ--INTP
ESTP--ENFP	ESFP--ENTP	ISTP--INFJ	ISFP--INTJ

Effective Communication. Yeakley has stated that two people must use the same function or communication style simultaneously for communication to be effective. To accomplish genuine dialogue,

One or both dyad members may have to shift from their primary to their secondary, their tertiary, or even their least preferred communication style so that both dyad members will be using the same communication style,

according to Yeakley (52:5).

If this shift does not occur, the communication tends to break down, particularly if the parties are using opposite types of communication (51:34). This imposes differing degrees of difficulty upon the communicators in achieving common agreement or understanding. Yeakley's findings are that the originator of a communication should translate his message into terms understandable by the receiver in order of the receiver's preferences. This translation into a different functional mode also has differing degrees of difficulty for the sender, depending upon his communication style.

Significantly, the most effective communication mix by psychological type is not identical types, but rather a moderate mix. Yeakley explains this as follows:

When two people have identical preferences on all four MBTI scales they also have identical communication style preferences and communication should be relatively easy for them--but only in their common primary style. . . . Some situations require the practical, common sense, reality-based, results-oriented style of the sensing type. Other situations call for the more creative, imaginative, meaning-centered, theory-oriented style of the intuitive type. Still other situations demand the logical, analytical, impersonal judgment of the thinking style. And some of the most important situations in human relations require the more subjective, personal, emotional, value-based judgment of the feeling style. When two people have the same strengths in terms of communication styles, they also have the same weaknesses. [Emphasis added.] That may explain why identical dyads have sometimes been found to be less satisfactory than moderately mixed dyads. (51:44-45)

Not all differences in type are of equal importance in communications effectiveness. When communication must span only one difference in functional preference, Yeakley concludes differences in primary communication style are the most important factor (52:16). When communication must span more than one difference in functional preference, differences in both the primary and secondary styles are important, followed by a difference in primary communication style along. Differences relating to extraversion versus introversion are the least important (51:45).

#### Summary of Myers-Briggs Typology

Myers and Briggs extended Jung's theory of psychological types into a system of typology and developed an

inventory mechanism for determining individuals' type preferences. The MBTI has been used not only in research settings but also in the field to describe and facilitate many factors bearing on work settings and occupational fit. It also has been effective in describing how individuals communicate and why their communication occasionally breaks down.

Each psychological type has a preferred communication style, and this is determined by the dominant function in the extraverted type and the auxiliary function in the inverted type. People communicate most effectively in their preferred styles. If the parties in a negotiation are of the same type, that is, if their preferences in perception and judging are alike, their chances of being understood and understanding one another are vastly improved (14; 35:208; 51:44). When differences exist, individuals may nevertheless construct a satisfactory common ground on which their minds may meet, but this requires adjustment on all parts. Essential to the common ground is mutual respect for dissimilarities (35:208).

The Myers-Briggs' typology also has been used to describe the internal processes which accompany negotiations and result in selection of conflict-handling strategies and tactics. The type preferences strongly influence people's modes of resolving differences, which is central to whether negotiations are settled or not. Just how

typology is evident in the selection of negotiation strategies and tactics is discussed next.

### Psychological Type and Negotiation

General. This portion of the literature review surveys theories pertaining to negotiation and integrates them with relevant research on Jungian typology. Negotiation is marked by preconceptions, communications and behaviors between the parties, their organizations and constituents, and often the larger society in which they take place. The extensive personal and external factors bearing upon a negotiation conspire to make negotiations extraordinarily complex phenomena for research. Consequently, research necessarily has focused on discrete facets of the negotiation processes and presents a diverse, if not disorganized, appearance (23:59).

The complexity of negotiations is efficiently portrayed by Lewicki's schematic (Figure 1) showing the many elements which impact negotiations.

Negotiations are shaped by the situation structure as well as the parties in the negotiation, both of which function to determine outcomes (47:892-894). The objectives and consequent tactics of negotiation often are influenced by internal and environmental factors over which individual negotiators have no control and, in the case of their own personalities, little awareness. During negotiation, parties attempt to influence one another's objectives,

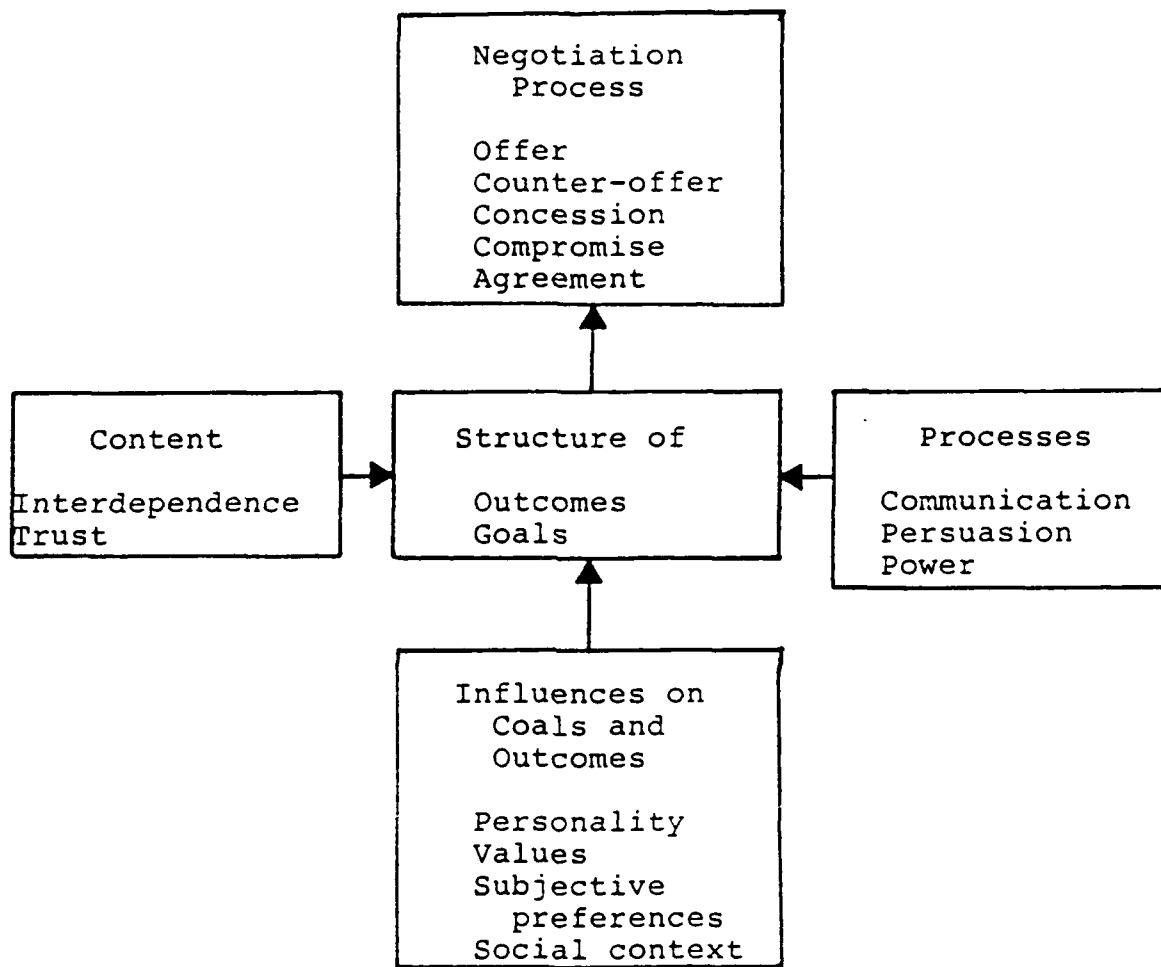


Fig. 1. Total view of factors bearing upon negotiation. Content, individual differences of negotiators, and behaviors overlap with structural variables to influence the negotiation process (27:44)



perceptions and behaviors to attain a desired settlement. That the participants are interdependent, and their objectives may, to some extent, be mutually exclusive, interjects monumental obstacles to attaining resolution.

Likert and Likert have defined limited resources, communication problems, different interests and goals, different perceptions and attitudes, and lack of situational clarity as the determinants of conflict (8:373). Since these determinants exist within the framework of negotiation, it is little wonder that "dealing with conflict is a central part of the negotiating process" (27:265).

Many popular books on negotiation are, upon analysis, largely anecdotal, and offer little reliable insight into the actual dynamics of the negotiation process (19; 20; 42). The business literature has dealt with negotiation in terms describing a bargaining procedure, and, with the exception of labor relations, some concepts of game theory and tricks-of-the-trade techniques to foster sales have surfaced. The Department of Defense, as well, has defined negotiation in procedural terms merely as "bargaining" (6:7A5; 39:112-113). It has remained for the behavioral sciences to deal with the process of negotiations and, particularly, the conflict inherent in the negotiation process. As Kilmann and Thomas note,

Conflict of interest, norms, beliefs, attitudes, and skills are conditions--things which exist over a period of time. As such they are structural constructs for explaining behavior. (23:61)

The behavioral sciences have explored dynamics of individual differences and conflict-handling behavior within the context of interpersonal and inter-organizational relationships. Much of the literature is directed at conflict arising in the interface between union and management, superiors and subordinates, and between departments, but a new awareness of conflict-handling as an element of management style is emerging (23:66). Although conflict can be understood to occur within an individual, such as ambivalence pertaining to roles, or within a global sphere, such as among nations, its scope here is upon that which occurs between two individuals or two social units, which the literature terms "dyadic conflict" (23:61). Because conflict often arises in circumstances involving competition, and the settings, emotions, perceptions and behavioral dynamics are rarely distinguishable, some literature has recommended conflict be used generically to include competition (47:890). This broader approach is adopted here.

For the purposes of this research, conflict is defined to occur within a negotiation when two strongly interdependent parties have differing and incompatible goals which must be reconciled for either to attain its objectives. For example, goals conflict when a buyer wants a scope of work within necessarily finite resources and the seller wants greater resources or lesser scope. As Lewicki and Litterer point out, "a seller cannot exist without a

buyer" (27:7). Both need to settle, yet agreement is constrained by separate interests. Despite the interdependence of the parties, conflict occurs, and its resolution is the subject or essence of the perceptions, communications, strategies and tactics of the parties involved.

It is important to note the literature does not maintain conflict is always harmful, but rather it may produce solutions that are superior for organizations and individuals, hence are beneficial to all parties involved (47:892-893). Viewed in this perspective, conflict is not a negative phenomenon to be avoided but rather a reality to be managed artfully and intelligently.

#### The Conflict Models

Two-dimensional Models. Deutsch has described individuals' approaches to situations in which their concerns differ as located upon an underlying continuum of cooperation versus competition, where cooperation aims to satisfy the other party's concerns, and competition attempts to satisfy one's own concerns (7; 24:972). Deutsch's dichotomy permitted initial investigations into conflict-handling despite its relatively simple dimensions. Walton and McKersie organized these two dimensions in terms of integrative or cooperative (win-win) approaches and distributive or competitive (win-lose) approaches (47:972; 49; 50). The latter are evident in Karrass' treatments of

negotiation, for example, and in the subtle adversarial assumptions of the Defense bargaining posture (6; 19; 20).

Distributive negotiating is earmarked by an assumption of scant resources; conflict among parties' goals; target and settlement ranges; discovery and persuasive strategies; tactics directed at altering the opponents' perceptions; and a bargaining pattern that begins with an opening offer, is followed by concessions, and culminates in final offers (27:75-100). The integrative or problem-solving approach is favored and examined in Shea's treatment of negotiation (42) and Fisher's and Ury's (11).

Integrative or win-win bargaining, also termed "dual concerns," is described by an assumption of equitably allocable resources; strategies and tactics oriented toward problem-solving; understanding the other party's needs; free flow of information; clear and accurate communication; and emphasis on commonality of purpose and mutual trust (27:101-128).

Thomas and Kilmann and Thomas identify two complementary one-dimensional models which, when synthesized, form a dual mode of conceptualizing conflict not unlike the previous models (23; 47). These are the process model, in which the flow of conflict-centered events is viewed as a cycle internal to the individual and consists of frustration, conceptualization, behavior and outcomes; and the structural model, in which the descriptors of conflict are

external to the individual and consist of factors such as organizational influences, societal pressures, and rules and procedures (23:61). The process model is subjectively oriented and unites the various theories of personality, cognitive dynamics, and managerial behavior which influence a negotiation outcome. The structural model is objectively oriented and unites theories pertaining to organizational change for the purpose of long-run organizational moulding, such as personnel hiring policy, procedures, and socio-political influences.

Multi-dimensional Models. A more complex scheme was developed by Blake and Mouton who hypothesized five categories of interpersonal conflict-handling responses which are preferred by individuals in a personal hierarchy (4; 47:913). Kilmann and Thomas term the five categories competing, collaborating, compromising, avoiding, and accommodating (24:971). Their discussion of Blake and Mouton's hierarchy of responses bears obvious parallels to Jungian and Brigg's and Myers' typology.

At the top of that hierarchy is what Blake and Mouton . . . call a "dominant style" of response. This is the behavior which Party tends to use habitually and feels most comfortable with. If that behavior seems inappropriate in a given situation or fails to work, Party may fall back upon the next response in his hierarchy--his "back-up style." And so on down the hierarchy. . . . Party's response hierarchy can be thought of as partially shaped by his motives and abilities. . . . Problem solving is easier for creative people . . . who can deal cognitively with complex issues. . . . Competition is an outlet for individuals with high needs to exercise power or dominance. . . .

Managers with high affiliative or interaction needs may be more sensitive to other's feelings and may, therefore, lean towards accommodation. . . . And managers who are "task-oriented" may be more interested in confronting and solving problems. (47:913)

Competing is synonymous with win-lose approaches or contending; collaborating with problem-solving, avoiding with denial and inaction, accommodating with harmonizing and yielding, and compromising with split-the-difference positions (24:971; 27:102). Thomas integrated the five dimensions with Deutsch's and Walton and McKersie's two-dimensional models to produce a unified schematic (Figure 2) (7; 50).

#### Psychological Types in the Multi-dimensional Model.

Because constructs for linking mental processes to observable outcomes illuminate the cause of behavior, an increasing number of researchers in the behavioral sciences have found the Jungian dimensions of personality to be particularly fruitful in describing decision-making style, cognitive style, management development, and information processing (16; 21; 41; 46). Jung's types also have been used to study conflict-handling behavior. Kilmann and Taylor applied Jungian typology in examining the underlying process of handling conflict in a laboratory setting and found the Jungian dimensions "exceedingly useful in predicting and explaining the effects of individual personality differences on these interpersonal dynamics" (24:973).

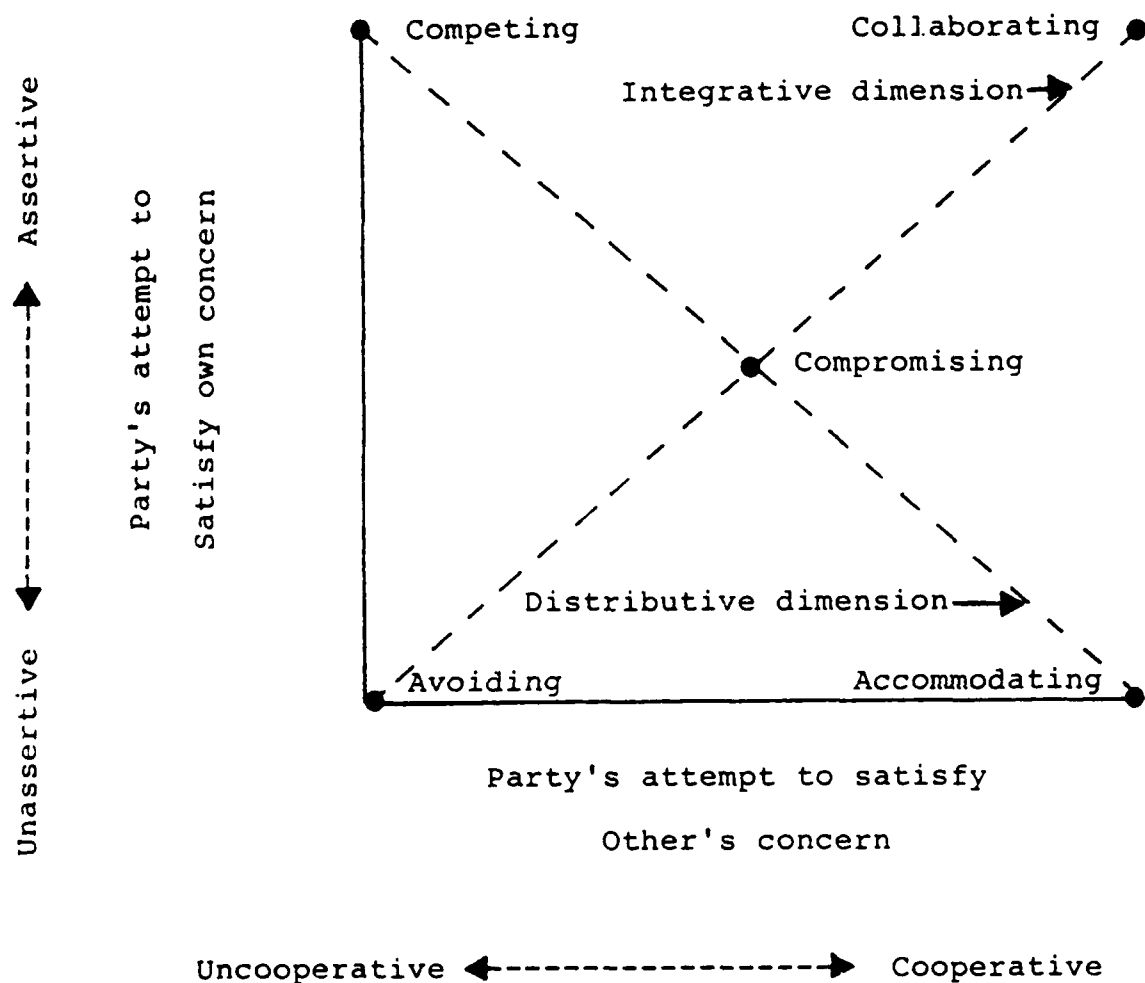


Fig. 2. Five conflict-handling modes, plotted according to the cooperation and assertiveness dimensions, also showing the integrative and distributive dimensions (24:972; 47:900; 48:159)

In subsequent research of conflict management, Kilmann and Thomas, using the MBTI in comparison with three conflict measuring instruments (the Thomas-Kilmann MODE instrument, the Hall Conflict Management Survey, and the Lawrence and Lorsch instrument), found a significant correlation between a preference for feeling and accommodation of others (24:976). The type with a preference for feeling is less assertive, less competitive, and more cooperative than the thinking type. On the judging-perceiving dimension, perceiving was negatively correlated with distributive (win-lose) approaches to conflict resolution. On all three instruments, extraversion was linked with integrative (win-win) approaches. Extraverts exhibited a tendency toward assertiveness and cooperativeness, but no tendency toward giving as opposed to talking. Extraversion also showed a weak tendency to be negatively related to avoiding and positively related to collaborating. No correlation was found between sensing and intuiting and the manner in which the parties described their "conflict behavior" (24:975). Kilmann and Thomas conclude:

The results of this preliminary study suggest that the Jungian functions related to judging, i.e., thinking vs feeling, and the type of enactment (the "attitudes" of introversion vs extraversion) may be significant influences upon conflict-handling behavior. (24:978)

Kilmann and Thomas united the theories of Deutsch, Walton and McKersie, and Blake and Mouton with Jungian psychological dynamics in Figure 3 (4; 7; 24; 50).



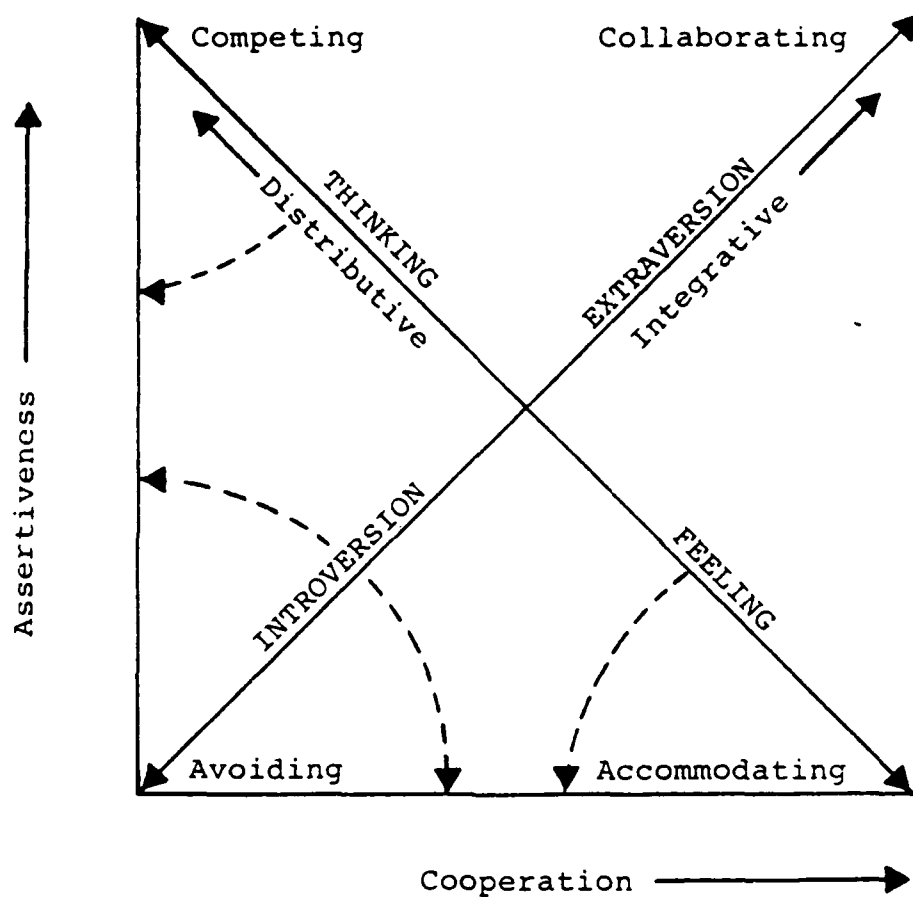


Fig. 3. Conflict-handling behavior as a reflection of the Jungian dimensions of thinking-feeling and introversion-extraversion (24:978)

The Kilmann-Thomas model shows extraversion-introversion on the integrative scale, with no rotation onto the distributive scale possible. It also shows the thinking-feeling dimension on the distributive scale, with no rotation onto the integrative scale (24:978).

Psychological Types in the Process Model. Thomas' schematic explains several phases of the process model and facilitates a total picture of negotiations. The process model is particularly germane to the instant study since the model's conflict cycle emphasizes mental processes which the MBTI reports. Frustration arises in the individual as a result of the perception that the parties' objectives differ. An individual then conceptualizes the difference in terms of his unique psychological framework. Thomas notes, "The element of subjective reality appears to be crucial in understanding and influencing a party's conflict-handling behavior" (47:896). In the conceptualizing phase, the individual organizes and interprets the elements of conflict as a function of his perceptions. It is during conceptualization that the parties define and scope the issue, become aware of alternatives and associated outcomes, and understand their different "stakes in a conflict" (47:900).

Behavior follows conceptualization and consists of three components, "orientation, strategic objectives and

tactics--and the determinants of each" (47:900). Thomas explains the function of each of these components:

To be sure, orientation, strategic objectives, and tactics are interrelated. However, they are to some extent independent since they respond in part to different variables. The collaborative orientation is partly a response to their mutual identification, while the competitive strategic objectives are partly a response to the perceived conflict of interest, and the tactics are partly shaped by each party's knowledge of the other. All three sets of influences are important in understanding the resulting behavior. (47:900)

Orientation is an individual's location on the continuum of desire to satisfy his own concerns versus the concerns of his opponent. In Figure 3, the vertical and horizontal axes show orientation; options for outcomes are displayed in the "joint outcome space" created by the intersection of the axes (47:900). Each option for conflict management has an associated outcome. The outcome for competition is domination, for collaboration is integration, for sharing is compromise, for avoidance is neglect, and for accommodation is appeasement.

Strategic objectives are located in the joint outcome space in terms of the opposing integrative and distributive dimensions. Any point in the space has an integrative and a distributive element corresponding to the amount of satisfaction to each party and their consequent shares of the matter under dispute. A party to conflict has some concept of a particular strategic objective's feasibility based upon how he conceptualizes the issue. The dynamic is as follows:

In the process model, these notions of feasibility interact with Party's preferred outcomes (orientation) to result in some sort of strategic objective. For example, if Party would prefer domination but finds his opponent strong, he may decide to aim for a compromise of some sort. No matter what his preferences, if Party conceptualizes the issue as unresolvable, he is likely to settle for no decision. If Party prefers integration and has an indeterminant conceptualization of the issue, he may search for an integrative solution. And so on. (47:903)

Tactics are molded by and designed to attain the strategic objective. Tactics most often discussed by the literature pertain to the distributive (competitive) and integrative (collaborative) approaches and are the "most likely to occur on issues which are important to a party" (47:903).

Competitive tactics are based on the parties' power which can be used to convince the other and are termed "bargaining" (47:903). Six such bases, defined by French and Raven, and used by Thomas in describing this phase of the process model are: information power, referent power, legitimate power, expert power, coercive power, and reward power (12; 47:903). Application may be "hard bargaining" or "soft bargaining" as a function of "how much one demands and the risks one is willing to take," and share common "characteristic behaviors" as well as "important consequences" (47:904). Fundamental characteristics involve the withholding or manipulation of information, which reduces the level of trust between the parties; firm commitment to the desired alternative, which reduces flexibility and

translates the issue into win-lose; and the overt or covert use of threats, which causes hostility.

Collaborative tactics differ in their problem-solving focus and "are designed to increase joint gain by finding alternatives which satisfy the concerns of both parties" (47:904). Parties identify underlying concerns, jointly search for satisfactory alternatives, and select the alternative which is most mutually satisfying. Fundamental characteristics involve the open and accurate sharing of information about concerns and outcomes, flexibility in alternatives and consequences, and trust in the other. The two modes tend to be mutually exclusive:

It is apparent that bargaining and problem-solving tactics tend to interfere with each other. . . . Bargaining tends to reduce the trust, candor, and flexibility required for problem solving. Likewise, the disclosures made during problem solving and the positive affect generated by it tend to discourage subsequent misrepresentation and bargaining. (47:904)

During the negotiation process, behaviors of the parties interact and trigger responses in one another. Strategic objectives and tactics may be redefined during a negotiation as a result of perceptions of the others' behavior and such shifting is termed "escalation/de-escalation" (47:905). Escalation heightens tension and conflict and can involve increasing the scope of issues, hostility, competitiveness and extreme positions. Central to the factors bearing on escalation are perception, communication, and predispositions of parties toward the other

and the conflict in general. Third party intervention may be required to de-escalate the heightening conflict (47:911). External factors, such as public pressure and organizational processes, have a large influence on the behaviors as well, but they are elements of the complimentary structural model.

The process model terminates with the outcome phase, where issues are either settled or dropped. With an integrative approach, long-term resolution is the probable result; the other strategies produce outcomes marked by residual frustration and, thus, conflict is "apt to recur" (47:909).

Department of Defense Studies  
of Negotiation

Department of Defense studies of negotiation which focus upon personality traits or the procedure of preparing for and conducting a negotiation are limited (3; 32; 37). Research to date fails to yield insight into the dynamics of psychological type and negotiation with the Defense arena. Trait or personality variables have been studied, but have repeatedly failed to produce useful relationships with negotiation outcomes or to predict behavior (24:972; 27:260).

In a 1985 thesis, Catlin and Faenza identified from given alternatives the five most preferred strategies and the ten top tactics favored by 278 U.S. Air Force

negotiators at four separate Air Force Systems Command (AFSC) buying divisions (5:viii). Because the research was exploratory, the authors could not explain why the negotiators selected as they did. Their definitions of strategies and tactics are in concert with those of the literature surveyed (5:7; 47:902-903). The USAF negotiators selected the following strategies, in rank order of preference, from a range of ten possible choices:

1. Bottom line--Negotiating on a total cost or price basis versus an item-by-item basis.
2. Participation or involvement--Designing the team composition to narrow or broaden the areas of negotiation, such as the use of experts.
3. Statistics--Using learning curves, trend analysis, or historical records as the primary support for the negotiation position.
4. Combination or the big pot--Introducing many issues at one time, using "throw-away" points to get major concessions.
5. Step-by-step--Presenting a series of acceptable minor points to obtain a major concession; also used to counter the bottom line strategy. (5:41)

These same negotiators identified the top ten tactics from 33 possible choices as the following: ask for lots of data, belabor fair and reasonable, split the difference offers, allow face-saving exits, off-the-record discussion, call frequent caucuses, low-ball offers, refer to your side's generosity, escalate to opponent's boss, escalate to your boss (5:46).

The Catlin and Faenza study clearly concludes that negotiations between government and DoD contractors are competitive (5:81). As is characteristically the case

in win-lose conflict, the government negotiators' perceptions of their opponents were negative:

Moreover, from the Air Force perspective, it is the contractor who uses antagonistic negotiating tactics, while the Air Force team is business-like, even-handed, and fair and reasonable. One can only speculate that defense contractor representatives may have a different view of both themselves and their Air Force Systems Command negotiating counterparts. (5:81)

### Literature Review Summary

Jung's theory of psychological types provides the foundation for the Myers-Briggs' typology and is operationalized with the MBTI. This instrument and the theory on which it is grounded have been useful in describing individuals' behavior patterns throughout their lives and in a host of work situations. It has provided rich insights into the process of communication, particularly on how communication fails, and how to improve communication despite individual differences generated by type. Communication is vastly improved when people realize their type distinctions, capitalize upon their strengths, and use the better modes of their receivers as channels to enhance understanding. Communication is the means by which negotiations are conducted and an awareness of communication difficulties springing from type differences can facilitate the course of a negotiation by boosting mutual cognizance.

Negotiations have been modeled by behavioral scientists in terms of conflict-handling behavior internal to individuals, and situation variables external to the



negotiating parties. In the realm of internal processes, the MBTI has yielded many insights into the mental activities which people use to understand and decide whether and how to resolve conflicts. How individuals think and their resulting behaviors, strategies and tactics, have been linked to their psychological types via the MBTI and the process model of conflict handling. Research has shown that individuals' psychological types do influence how they perceive, conceptualize, and determine their behaviors in negotiation situations.

### III. Methodology

This chapter discusses the methodology used to accomplish the objectives of this research. It begins with a discussion of the sampled population. Next, how the data were collected is discussed. Analytical techniques applied to the research objective and the four research questions used to attain that objective are presented. Finally, the chapter is concluded with a brief summary.

#### Population

The population studied included all contracting officers and price analysts in the 1102 job series who were currently serving as negotiators or who had at some time in their contracting careers. Their pay grades ranged from GS-07 through GM-15. All were employed by the Aeronautical Systems Division as of January 1986. The population and its relative percentage by grade is described in Table 5.

The population was divided into strata composed of each grade level and a simple random sample was selected from each stratum using a table of random digits (9:470). Half of each stratum were selected to participate in the investigation, as described in Table 6.

Between the time the samples were selected and when the instruments were distributed, seven selectees vacated their positions. Replacements were not selected.

TABLE 5  
DESCRIPTION OF THE POPULATION

Grade	Number	Percent*
GM-15	15	3
GM-14	41	8
GM-13	95	19
GS-12	244	48
GS-11	42	8
GS-09	37	7
GS-07	<u>34</u>	<u>7</u>
Total	508	100

\*Rounded to the nearest whole number.

TABLE 6  
STRATIFIED RANDOM SAMPLE

Stratum Grade	Total Strata Size	Total Sample Size*
GM-15	15	8
GM-14	41	21
GM-13	95	48
GS-12	244	122
GS-11	42	21
GS-09	37	18
GS-07	<u>34</u>	<u>18</u>
Total	508	256

\*Rounded to nearest whole number.

A total of 249 surveys consisting of the MBTI and the strategies and tactics questionnaire were distributed. Of the total 249, 99 (39.76 percent) responded to the survey.

#### Data Collection

Data collected in this survey includes responses to the MBTI and a questionnaire on preferences in negotiation strategies and tactics designed by Catlin and Faenza (Appendix G) (5:23-24). In order to facilitate correlating responses, control numbers ranging from 001 to 249 were assigned to the two instruments prior to distribution. Only the control numbers were used to correlate data between the instruments; names of respondents were not collected or used. Instruments were distributed during May 1986 and returned during May and June 1986.

The MBTI Form G, a self-response instrument, was provided the participants. The Form G was accompanied by an optical scan answer sheet which the respondents also received and completed. The responses were scored manually using master answer keys and scores were assigned in accordance with procedures contained in Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator (34:8-9).

Participants also completed the nine-page questionnaire on strategies and tactics developed by Catlin and Faenza (5:22-24). This questionnaire lists ten strategies and asks the respondent to rank them by order of

preference. It also lists 33 tactics and asks the respondent to list and rank by frequency the top five tactics contractors use. Questionnaire responses were scored manually and the data were coded and extracted into tables. All responses were extracted and aggregated by assigned control numbers.

#### Analytical Techniques

Subprograms of the Statistical Package for the Social Sciences (SPSSx) were used in addition to manual computations to conduct the statistical analyses (36; 44; 45). Significances were calculated with an alpha value of 0.01 and less, depending on the program and the data. These are discussed individually in Chapter IV, Results and Analysis.

Research Objective. Determine the psychological types of U.S. Air Force price analysts and contract negotiators and if a correlation exists between psychological type and preferred negotiation strategies and tactics.

First Research Question. Does a definitive pattern of psychological type exist among contracting officers and price analysts? The following null ( $H_0$ ) and alternative ( $H_a$ ) hypotheses were used for statistical analysis:

$H_0$ : Psychological type distribution of contracting officers and price analysts is the same as that of the general population.

H<sub>a</sub>: Psychological type distribution of contracting officers and price analysts is different from that of the general population.

Scored responses were assigned to each of the 16 types based upon the MBTI results and the frequency of each type was determined. Individual preference scores were converted to continuous scores in accordance with procedures contained in the Manual (34:9) to obtain the mean strength of preferences of the respondents by major type differentiations (9:89). Responses were grouped by preferences for extraversion and introversion (EI), sensing and intuiting (SN), thinking and feeling (TF), and judging and perceiving (JP). Frequencies were computed for each grouping by gender. Type frequencies also were computed for total respondents on the basis of age and years in contracting.

Response data were compared using the SPSSx non-parametric chi-square test (45:673-674) with Center for Applications of Psychological Type (CAPT) data base for the Form G (29:3-9; 34:50-51). The Form G data bank was selected for comparison because the current research also used the Form G. Of the 15,791 cases in the data bank, 50 percent of the males and 54 percent of the females completed at least one year of college (34:45). It is somewhat biased toward T types because it contains over 3,500 samples of engineering students (34:45). Responses were also compared with MBTI types in samples of managers and

administrators from the MBTI data bank (34:90). The Form G data bank is broken out by gender; the MBTI data bank for managers contains only one statistic and includes both males and females.

In order to make this comparison, the gender frequencies in the CAPT data bank for the Form G had to be combined. The Form G expected values were weighted and computed to combine statistics for males and females into one test statistic. These are shown in Appendix F. MBTI type data collected for this research were grouped into the eight Jungian types shown in Appendix B for comparison to the general population and to managers. This was necessary because many of the expected values of the test cells were otherwise too small to permit testing. The chi-square test was used to determine whether a significant difference existed between the observed distribution of the sample types versus the types expected from the two CAPT data bases.

Second Research Question. Does a definitive pattern of negotiation strategies exist among the contracting officers and price analysts relating to their psychological types? The following null ( $H_0$ ) and alternate ( $H_a$ ) hypotheses were used for statistical analysis:

$H_a$ : There is no pattern of preferred negotiation strategies among contracting officers and price analysts related to their psychological types.

H<sub>a</sub>: There is a pattern of preferred negotiation strategies among contracting officers and price analysts related to their psychological types.

A total of 18 responses were eliminated from the data set because the rankings were incomplete or contained write-in entries unique to one respondent only. The total number of cases in the data set was 81. The following type groupings were used in analyzing the data: EI, SN, TF, JP; IJ, IP, EP, EJ; and ST, SF, NT, NF; on the basis of McCaulley's suggestions (28:337-338). Additionally, where the groups were sufficiently large to yield significant results, the test was run against these groups separately. Data were not analyzed by any demographic distinctions; only type distinctions were used.

Two SPSSx subprograms were used to evaluate the data. The first program, NPAR TEST Kendall, calculates the Kendall coefficient of concordance or Kendall W, which determines the mean rankings of the ten strategies by each type grouping listed above. It also calculates the significance of agreement within each type grouping. The second program, NONPAR CORR, calculates the Kendall tau or tau-alpha, which is a test of correlation between each type grouping and the mean rankings of the ten strategies. It also calculates the significance of the relationship. The Kendall tau may range from -1.0 to 1.0. A correlation of -1.0 indicates complete disagreement, such as the ranks being opposite. Conversely, a correlation of 1.0 indicates



complete agreement among the ranks. If the correlation statistic is zero, there is no correlation between the ranks. The NONPAR CORR program also computes the significance of the correlation.

Third Research Question. Does a definitive pattern of negotiation tactics exist among contracting officers and price analysts relating to their psychological type? The following null ( $H_0$ ) and alternate ( $H_a$ ) hypotheses were used for statistical analysis.

$H_0$ : There is no pattern of preferred negotiation tactics among contracting officers and price analysts related to their psychological types.

$H_a$ : There is a pattern of preferred negotiation tactics among contracting officers and price analysts relating to their psychological types.

In order to facilitate obtaining significant results when correlated with type preferences, the 33 tactics were regrouped into five primary categories as shown in Appendix G. Groupings were determined in discussion with Capt Faenza (10). The method of grouping maintained ranked order specified by respondents. The same type groupings noted in the discussion of the second research question were used: EI, SN, TF, JP; IJ, IP, EP, EJ; and ST, SF, NT, and NF. Additionally, where the type groups were sufficiently large to yield significant results, the tests were conducted individually. Only type groupings were analyzed;

no analyses were performed by demographic characteristics. As was the case with the strategy responses, incomplete or unique responses were eliminated from the analyses. Of the total 99 responses, 15 were eliminated; 84 remained.

Testing was conducted using two SPSSx programs, NPAR TEST Kendall and NONPAR CORR, similar to the process in the previous question. First, the Kendall W test was performed against a data set consisting of each respondent's regrouped, ranked tactics. The resulting mean ranks for each category of tactic by type group provided the data set for the second test. Second, the program NONPAR CORR determined the degree of correlation between the differing type groupings' mean ranks of tactics and yielded probability statistics for the associated correlation statistic by type grouping.

Fourth Research Question. Does a definitive pattern of perception of contractor tactics exist among contracting officers and price analysts relating to the psychological types of the negotiators? The following null ( $H_0$ ) and alternate ( $H_a$ ) hypotheses were used for statistical analysis.

- $H_0$ : There is no pattern of perceived contractor tactics among contracting officers and price analysts related to the psychological types of the negotiators.
- $H_a$ : There is a pattern of perceived contractor tactics among contracting officers and price analysts related to psychological types of the negotiators.

A total of 84 cases composed the data base for this analysis. These were evaluated by the following type groupings: EI, SN, TF, JP; IJ, IP, EP, EJ; and ST, SF, NT, NF. Additionally, because the groups were sufficiently large to yield significant results, the individual tests were run. As was the procedure for the third question, the tactics were regrouped into five primary categories as shown in Appendix G. The SPSSx programs NPAR TEST Kendall and NONPAR CORR were run similar to the third question.

#### Summary

This chapter has reviewed the methodology used to collect and analyze the data necessary to answer the stated research objective and hypotheses. Identification of the population and sampling processes were discussed. Next, statistical methods of answering each hypothesis were presented and discussed. The following chapter presents the results and analysis of the data.

#### IV. Results and Analysis

This chapter presents the results of analyses conducted on the data collected from the MBTI and the questionnaire on strategies and tactics. Results are presented in the order of the research questions. Descriptive and comparative data on the sample population are presented first. Next, results of the questions pertaining to government negotiators' preferences for strategies and tactics are discussed. Last, the negotiators' perceptions of contractors' tactics are presented.

##### Type Distribution Results

Descriptive Results. Of the 99 respondents, 69 were male and 30 were female. Total sample population distribution of types is displayed in Table 7. Only one type, ESFP, was not represented in the sample. The three most frequent type groups were ISTJ (38), ESTJ (20), and ENTJ (8), which comprised some two-thirds of the respondents. Table 8 shows distribution of types by male and female. As was the case for the total sample, ISTJs, ESTJs and ENTJs dominated the male population, accounting for almost 70 percent of the types. The modal type was ISTJ. Four types did not occur among the males: ESFP, ENFP, ENTP and ENTJ. Among the female respondents, ISTJ,

TABLE 7  
DISTRIBUTION OF MBTI TYPES OF CONTRACTING OFFICERS  
AND PRICE ANALYSTS

(N = 99)

<u>ISTJ</u>	<u>ISFJ</u>	<u>INFJ</u>	<u>INTJ</u>
N = 38	N = 5	N = 2	N = 3
% = 38.4	% = 5.1	% = 2.0	% = 3.0
<u>ISTP</u>	<u>ISFP</u>	<u>INFP</u>	<u>INTP</u>
N = 3	N = 2	N = 4	N = 5
% = 3.0	% = 2.0	% = 4.0	% = 5.1
<u>ESTP</u>	<u>ESFP</u>	<u>ENFP</u>	<u>ENTP</u>
N = 2	N = 0	N = 2	N = 1
% = 2.0	% = 0.0	% = 2.0	% = 1
<u>ESTJ</u>	<u>ESFJ</u>	<u>ENFJ</u>	<u>ENTJ</u>
N = 20	N = 3	N = 1	N = 8
% = 20.2	% = 3.0	% = 1.0	% = 8.1

\*Percentages rounded to the nearest tenth.

TABLE 8

DISTRIBUTION OF MBTI TYPES--MALE/FEMALE  
CONTRACTING OFFICERS AND PRICE ANALYSTS

(N = 99; Male = 69; Female = 30)

<u>ISTJ</u>	<u>ISFJ</u>	<u>INFJ</u>	<u>INTJ</u>
M = 33 % = 47.82	M = 3 % = 4.35	M = 1 % = 1.45	M = 2 % = 2.90
F = 5 % = 16.67	F = 2 % = 6.67	F = 1 % = 3.33	F = 1 % = 3.33
<u>ISTP</u>	<u>ISFP</u>	<u>INFP</u>	<u>INTP</u>
M = 3 % = 4.35	M = 2 % = 2.90	M = 2 % = 2.90	M = 3 % = 4.35
F = 0 % = 0.0	F = 0 % = 0.0	F = 2 % = 6.67	F = 2 % = 6.67
<u>ESTP</u>	<u>ESFP</u>	<u>ENFP</u>	<u>ENTP</u>
M = 2 % = 2.90	M = 0 % = 0.0	M = 0 % = 0.0	M = 0 % = 0.0
F = 0 % = 0.0	F = 0 % = 0.0	F = 2 % = 6.67	F = 1 % = 3.33
<u>ESTJ</u>	<u>ESFJ</u>	<u>ENFJ</u>	<u>ENTJ</u>
M = 11 % = 15.94	M = 3 % = 4.35	M = 0 % = 0.0	M = 4 % = 5.80
F = 9 % = 30.00	F = 0 % = 0.0	F = 1 % = 3.33	F = 4 % = 13.33

\*Percentages rounded to the nearest hundredth.

ESTJ and ENTJ comprised 60 percent of the sample; five types were not represented: ISTP, ISFP, ESTP, ESFP, and ESFJ. ESTJ was the modal type.

The distribution of MBTI groupings for the total sample, segregated by male and female, is shown in Table 9. Over-all type groupings showed an uneven distribution in all the primary dichotomies: Is outnumbered Es almost two-to-one; Ss outnumbered Ns almost three-to-one; Ts and Js outnumbered Fs and Ps almost four-to-one. Of the function pairs, STs outnumbered all other pairs with almost two-thirds of the total. The attitude-perception pairs were nearly half IJs, with EJ a close second as about one-third. Clearly, P types are minorities in the contracting work setting.

Comparing the groupings by gender, one notes that Is dominate the male groupings with 71.01 percent, but Es dominate the female groupings, comprising slightly more than half the sample with 56.67 percent. As was the case with the over-all sample distribution of groupings, the male type groupings were concentrated in I, S (82.6 percent), T (84.06 percent) and J (82.61 percent). This trend was not as pronounced among the females, whose distributions were much closer in the EI and SN groupings. For the females, only the TF (73.33 percent T) and JP (76.67 percent J) dimensions were skewed, displaying an unusual lack of Fs. Among the males, the paired groupings

TABLE 9  
OVER-ALL MBTI TYPE DISTRIBUTIONS BY TYPE GROUPINGS  
(N = 99; Male = 69; Female = 30)

Type	Total		Male		Female	
	N	Percent*	M	Percent*	F	Percent*
E	37	37.40	20	28.90	17	56.67
I	62	62.60	49	71.01	13	43.33
S	73	73.70	57	82.60	16	53.33
N	26	26.30	12	17.39	14	46.67
T	80	80.80	58	84.06	22	73.33
F	19	19.20	11	15.94	8	26.67
J	80	80.80	57	82.61	23	76.67
P	19	19.20	12	17.39	7	23.33
ST	63	63.63	49	71.01	14	46.67
SF	10	10.10	8	11.59	2	6.67
NF	9	9.09	3	4.35	6	20.00
NT	17	17.17	9	13.04	8	26.67
IJ	48	48.48	39	56.52	9	30.00
IP	14	14.14	10	14.49	4	13.33
EP	5	5.05	2	2.90	3	10.00
EJ	32	32.32	18	26.09	14	46.67

\*Rounded to nearest hundredth.



showed a preponderance of STs (71.01 percent) and IJs (56.52 percent); whereas the STs accounted for just under half (46.67 percent) of the females, as did the EJs (46.67 percent), followed by IJs (30.00 percent). Clearly the male element of the sample contributed the characteristic ISTJ tendency of the sample. The females contributed a far higher proportion of Ts than would have been expected.

Sample population MBTI types were correlated with grade (controlling for gender), age, and years in contracting as well. These are reported in Appendices H through J, respectively.

Statistical Results. Statistical results are divided into separate sections on each basis of comparison for which tests were conducted.

Jungian Type Comparison. As noted in Chapter III, the 16 types were grouped into the eight Jungian types to permit the chi square test for significance to be conducted against the two CAPT data banks, one based upon the general population for Form G and the other based upon managers. The expected values of the CAPT data bank for the general population from Form G were adjusted to reflect the number of males and females in the sample (Appendix F). Results of the test for the total sample compared with the general population are

shown in Table 10; the results of the comparison with managers are shown in Table 11.

As is evident in Table 10, the comparison of the sample to the general population shows a significant difference between the sample and the population. The chi square statistic was significant at greater than an alpha level of .001, which provides strong evidence that the Jungian types of the contracting population are significantly different from those of the general population. The residual differences in Jungian types IS, ET, EN, ES and EF appeared to account for the distinctive flavor of contracting types in general. The Jungian types IS and ET were overrepresented; while EN, ES and EF were underrepresented. The Myers-Briggs type ISTJ accounted for the overrepresentation of Jungian type IS. The ESTJ accounted for the greater part of the overrepresentation of the Jungian type ET. The largest proportions of underrepresented Myers-Briggs types were ENFP and ENTJ (Jungian type EN). The ESFJ and ENFJ (Jungian type EF), and ESTP and ESFP (Jungian type ES), were approximately equally underrepresented in the sample.

Table 11, which compares the sample to managers, was significant at greater than an alpha level of .001. These analyses also show a statistically significant difference between the sample and the CAPT data for managers. The Jungian type IS was significantly overrepresented,

TABLE 10  
COMPARISON OF SAMPLE TO GENERAL POPULATION (FORM G)  
(N = 99)

Chi-Square: 51.475; Significance: 0.000 (7 d.f.)				
MBTI Type	Jungian Type	Observed	Expected	Residual
ISTJ	IS	43	19.73	23.27
ISFJ				
INFJ	IN	5	9.47	-4.47
INTJ				
ISTP	IT	8	10.81	-2.81
INTP				
ISFP	IF	6	8.54	-2.54
INFP				
ESTP	ES	2	8.78	-6.78
ESFP				
ENFP	EN	3	12.62	-9.62
ENTP				
ESTJ	ET	28	19.02	8.89
ENTJ				
ESFJ	EF	4	10.03	-6.03
ENFJ				

TABLE 11  
COMPARISON OF SAMPLE TO MANAGERS  
(N = 99)

Chi-Square: 34.883; Significance: 0.000 (7 d.f.)				
MBTI Type	Jungian Type	Observed	Expected	Residual
ISTJ	IS	43	21.77	21.23
ISFJ				
INFJ	IN	5	7.99	-2.99
INTJ				
ISTP	IT	8	7.03	.97
INTP				
ISFP	IF	6	7.03	-1.03
INFP				
ESTP	ES	2	5.95	-3.95
ESFP				
ENFP	EN	3	11.25	-8.25
ENTP				
ESTJ	ET	28	27.40	.60
ENTJ				
ESFJ	EF	4	10.58	-6.58
ENFJ				

largely because of the ISTJ. However, the overrepresentation of the Jungian type ET when compared to the general population was not apparent in the comparison with managers. The underrepresented types remained Jungian types EN and EF, with types ES and EN slightly underrepresented.

Analysis of Primary Dichotomies. The CAPT data for the general population (Form G) were segregated by the MBTI dichotomies for the total sample, and for males and females individually. Chi square tests for significance were conducted against each. Results are displayed in Tables 12, 13, and 14.

As can be seen in Table 12, over-all sample comparisons showed each dichotomy was significantly different from the CAPT data base. The sample population was significantly different from the CAPT data bank for the general population base because there were proportionately more Js, more Ts, more Ss and more Is, in rank order of significance, than in the general population. Results for the males, shown in Table 13, differed from the total sample only in the proportion of different types. The male respondents showed greater preference for the S, J, I and T dimensions, in that order, than the general population, and their preference was statistically significant. Data for females are shown in Table 14. The females differed from the general female population less than did the males from the general male population. Females

TABLE 12  
COMPARISON OF SAMPLE BY PRIMARY DICHOTOMIES (FORM G)

Total (1 d.f.)			
Dichotomy	Observed	Expected	Residual
E	37	50.43	-13.43
I	62	48.57	13.43
Chi Square Statistic: 7.287		Significance Level: 0.007	
S	73	55.78	17.22
N	26	43.22	-17.22
Chi Square Statistic: 12.182		Significance Level: 0.000	
T	80	60.56	19.44
F	19	38.44	-19.44
Chi Square Statistic: 16.066		Significance Level: 0.000	
J	80	58.29	21.72
P	19	40.72	-21.72
Chi Square Statistic: 19.678		Significance Level: 0.000	

TABLE 13  
COMPARISON OF SAMPLE MALES BY  
PRIMARY DICHOTOMIES (FORM G)

Males (1 d.f.)			
Dichotomy	Observed	Expected	Residual
E	20	34.02	-14.02
I	49	34.98	14.02
Chi Square Statistic: 11.397		Significance Level: 0.001	
S	57	38.91	18.09
N	12	30.09	-18.09
Chi Square Statistic: 19.286		Significance Level: 0.000	
T	58	48.02	9.98
T	11	20.98	-9.98
Chi Square Statistic: 6.822		Significance Level: 0.009	
J	57	39.95	17.05
P	12	29.05	-17.05
Chi Square Statistic: 17.284		Significance Level: 0.000	

TABLE 14  
COMPARISON OF SAMPLE FEMALES BY  
PRIMARY DICHOTOMIES (FORM G)

Females (1 d.f.)			
Dichotomy	Observed	Expected	Residual
E	17	16.41	0.59
I	13	13.59	-0.59
Chi Square Statistic: 0.047		Significance Level: 0.829	
S	16	16.86	-0.86
N	14	13.14	0.86
Chi Square Statistic: 0.100		Significance Level: 0.752	
T	22	12.52	9.46
F	8	17.46	-9.46
Chi Square Statistic: 12.262		Significance Level: 0.000	
J	23	18.33	4.67
P	7	11.67	-4.67
Chi Square Statistic: 3.059		Significance Level: 0.080	



were significantly overrepresented in the T and underrepresented in the F categories. The JP dimension for females showed a slight tendency toward J, which was significant at the .08 level. The EI and SN dimensions were not significantly different from the CAPT data base for females. Both the EI and SN dimensions varied in the same direction as the data base. There were more Es than Is, and more Ss than Ns. The males accounted for the significant differences in the EI and SN dimensions of the over-all sample. Both males and females accounted for the statistical significance of the TF and JP differences from the CAPT data base which combined males and females.

Analysis of Paired Groupings. Comparisons of type groupings by functional (ST, SF, NF, NT) and attitudinal (IJ, IP, EP, EJ) preferences for the total sample, and for males and females individually, also were segregated and tested against the appropriate CAPT data base. Results are shown in Tables 15, 16, and 17. Functional groupings for the combined sample (Table 15) showed a statistically significant overrepresentation of STs, whereas SFs, NTs and NFs were approximately equally underrepresented. Over-all, the function groupings were significantly different from the general population. Attitude groupings for the combined sample showed significant overrepresentation of IJs and underrepresentation of EJs. IPs were slightly underrepresented, and EPs were slightly

TABLE 15  
COMPARISON OF SAMPLE TO TYPE PAIRS (FORM G)

Total (3 d.f.)			
Type Pair	Observed	Expected	Residual
ST	63	36.16	- 28.84
SF	10	19.58	-9.58
NF	9	18.89	-9.89
NT	17	24.38	-7.38
Chi Square Statistic: 32.025		Significance Level: 0.000	
IJ	48	29.20	18.80
IP	14	19.37	-5.37
EP	32	29.08	2.92
EJ	5	21.35	-16.35
Chi Square Statistic: 26.402		Significance Level: 0.000	

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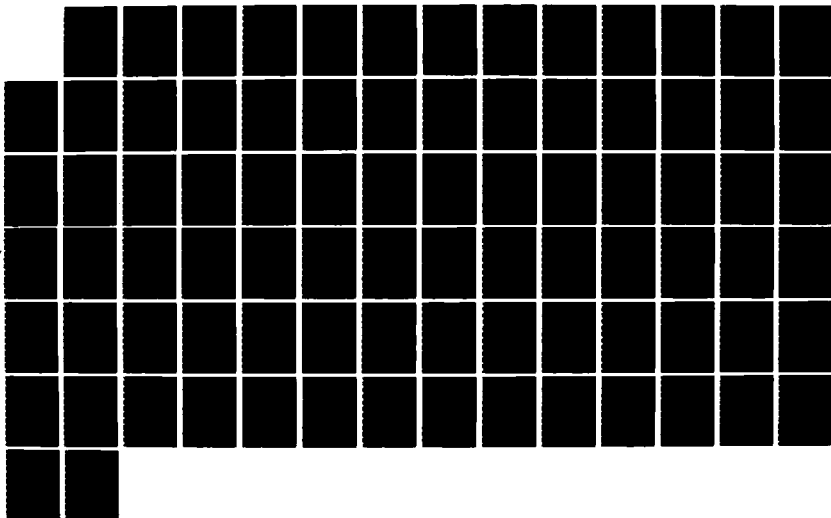
PSYCHOLOGICAL TYPE AND ANALYSIS OF PREFERRED  
NEGOTIATION STRATEGIES AND T (U) AIR FORCE INST OF  
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C M JOHNSTONE SEP 86 AFIT/GLM/LSM/865-36

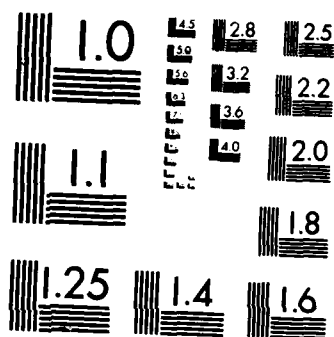
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MICROCOPY RESOLUTION TEST CHART  
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TABLE 16  
COMPARISON OF SAMPLE MALES BY TYPE PAIRS (FORM G)

Male (3 d.f.)			
Type Pair	Observed	Expected	Residual
ST	49	28.50	20.50
SF	8	10.40	-2.40
NF	3	10.70	-7.70
NT	9	19.40	-10.40
Chi Square Statistic: 26.416		Significance Level: 0.000	
IJ	39	20.56	18.44
IP	10	14.42	-4.42
EP	2	14.43	-12.63
EJ	18	19.39	-1.39
Chi Square statistic: 28.896		Significance Level: 0.000	

TABLE 17

## COMPARISON OF SAMPLE FEMALES BY TYPE PAIRS (FORM G)

Female (3 d.f.)			
Type Pair	Observed	Expected	Residual
ST	14	7.58	6.42
SF	2	9.30	-7.30
NF	6	8.18	-2.18
NT	8	4.94	3.06
Chi Square Statistic: 13.644		Significance Level: 0.003	
IJ	9	8.64	.36
IP	4	4.95	-.95
EP	3	6.72	-3.72
EJ	14	9.69	4.31
Chi Square Statistic: 4.174		Significance Level: 0.243	

overrepresented. Over-all, there was a significant difference from the general population in the attitude groupings.

Function groupings for the male sample (Table 16) showed a significant overrepresentation of STs, and a significant underrepresentation of NTs and NFs. SFs were slightly underrepresented. Over-all, the functional groupings for the males were significantly different from the general population. The attitude groupings showed a significant overrepresentation of IJs and underrepresentation of EPs. IPs and EJs were slightly underrepresented. Over-all, the attitude groupings showed a significant difference from the general population of males.

The function groups of the females (Table 17) showed a significant underrepresentation of SFs, which was almost balanced by the significant overrepresentation of STs. Likewise, the small overrepresentation of NTs was balanced by the underrepresentation of NFs. Over-all, the females in the sample were significantly different in function when compared to the general female population. The attitude groupings of the females showed an overrepresentation of EJs, balanced by an underrepresentation of EPs. A slight overrepresentation of IJs was balanced by a slight underrepresentation of IPs. Over-all, the females were not significantly different by attitude groupings from the females in the general population.

Continuous Scores. The total sample mean continuous score in the IE dimension was 110.01 with a standard deviation of 25.403. The median value was 111.00 and the mode was 133.00. These three measures show the sample's over-all tendency toward the I preference. The total sample mean continuous score in the SN dimension was 81.303 with a standard deviation of 30.709. The median and mode were 79.00. These measures show the sample's over-all tendency toward the S preference. The mean continuous score in the TF dimension was 73.828 with a standard deviation of 25.140. The median value was 67.00 and the mode was 51.00. These measures show the over-all tendency toward the T preference. The total sample mean continuous score in the JP dimension was 77.97 with a standard deviation of 23.936. The median value was 75.00 and the mode was 61.00. These measures show the over-all tendency toward the J preference.

Type Distribution Recap. In all, the various descriptive and statistical analyses confirm a sample that differs significantly from the general population by having more Is, Ss, Ts and Js than would be expected. The descriptive data showed the largest type groupings were ISTJ, ESTJ and ENTJ; and the smallest groupings were INFJ, ISFP, ESTP, ENFP, ENTP, ENFJ and ESFP (all with 2 percent or less of the sample). Descriptive analyses of dichotomous



preferences showed a preponderance of Is, Ss, Ts and Js; and of paired groupings, STs and IJs. The statistical tests conducted against the Jungian types confirmed the significant overrepresentation of IS types, which consist of ISTJ and ISFJ types, and the underrepresentation of EN (ENFP and ENTP), EF (ESFJ and ENFJ), and ES (ESTP and ESFP) types. Chi square tests of the dichotomous preferences showed significant overrepresentation of Is, Ss, Ts and Js. Within the function and attitude groupings, chi square tests showed significant overrepresentation of STs and IJs. Continuous scores showed clear preferences for I, S, T and J.

#### Results of Strategy Preferences

General. Strategy preferences for 81 useable data sets were tested using SPSSx NPAR TEST Kendall and mean rankings of the ten strategies were determined for each of the following groupings: E, I, S, N, T, F, J, and P; ST, SF, NF, and NT; IJ, IP, EP, and EJ; and ISTJ and ESTJ. The results of the Kendall W tests determining mean ranks are condensed in Table 18. These results provided input to perform Kendall tau tests for correlation among the following groupings: EI, SN, TF, and JP; ST, SF, NF and NT; IJ, IP, EP, and EJ; and ISTJ and ESTJ.

Kendall W Results. The Kendall W results displayed in Table 18 show the average ranked score and the ranking

TABLE 18  
KENDALL W RESULTS FOR THE TOTAL SAMPLE

Strategy	Average Ranked Score	Rank
1. Combination	4.55	3
2. Coverage (Bottom Line)	3.31	1
3. Definite Action	5.52	6
4. Limits	5.93	7
5. Participation	4.70	4
6. Patience	6.68	8
7. Surprise	7.72	10
8. Reversal	7.65	9
9. Statistics	3.85	2
10. Step-by-step	5.09	5
Kendall W - .2466; Significance - .000		

of the ranked scores for the total 81 cases in the data set. Each individual grouping was analyzed in the same manner as shown in Table 18. The individual Kendall Ws and the significance levels of the groupings are summarized in Table 19.

The over-all agreement as to ranking of each strategy within the total sample is shown by the significance level of .0000 in Table 18. The high significance level shows a fair consensus on which strategies were preferred by rank. Looking at the rankings, one can see that the top three preferences of the sample population as

TABLE 19  
RESULTS OF KENDALL W TEST BY GROUPINGS

Grouping	N=	Kendall W	Significance Level
E	28	.2320	.0000
I	53	.2583	.0000
S	62	.2520	.0000
N	19	.2513	.0000
T	66	.2532	.0000
F	15	.3400	.0000
J	64	.2628	.0000
P	17	.2535	.0000
ST	54	.2697	.0000
SF	8	.3769	.0013
NF	7	.3766	.0048
NT	12	.2369	.0024
IJ	40	.2969	.0000
IP	13	.2293	.0015
EP	4	.4424	.0684
EJ	24	.2192	.0000
ISTJ	33	.3146	.0000
ESTJ	17	.3452	.0000
ALL	81	.2466	.0000

a whole were coverage, statistics, and combination, respectively. The three least preferred strategies were surprise, reversal, and patience. Table 19 displays the significance levels of the analyses done by the individual groupings. Each individual grouping was internally consistent in how it ranked the strategies, indicating consensus among the members of the group. The only group which failed to agree at a significance level of greater than .01 was EP. This difference is probably due to the small number (4) of respondents in that group.

Kendall Tau Results. The Kendall Tau test determines direction and magnitude of correlation or lack of correlation between the rankings of variables (43:213-223). It was used to determine correlation between each type grouping by the mean rankings of the ten strategies. If the correlation is positive, the two groupings are in agreement; if the correlation is negative, the groupings disagree; if there is no association, the correlation is zero. For example, positive correlation means as one group's rankings increased (or decreased), so did the comparison grouping's rankings. The significance level indicates the probability of the correlation occurring by chance. A high significance level (a low value, such as .000) indicates a very small probability that the correlation occurred accidentally. To establish a meaningful preference as a

function of psychological type, a correlation approaching zero or a negative correlation is required.

The Kendall tau results and the significance levels displayed in Table 20 show a generally highly positive correlation in rankings among the various groupings tested. The table displays the dichotomous preferences first, followed by the function pairs, the attitude pairs, and the two types with sufficient numbers in them to permit individual testing.

Within the dichotomous pairs, for example, Es and Is showed no difference in their preferences for strategies, and the significance level of .000 indicates a very small probability that this agreement was accidental. The lowest correlation among the dichotomous choices was T to F, which yielded a correlation coefficient of .5683 and a significance level of .012. This means the Ts and Fs had similar rankings of the strategies, but reversed order in a few of them. Nevertheless, the direction of their correlation was positive, indicating agreement in their rankings.

Within the function pairs, the correlations ranged from .7821 (NF to ST) to .3333 (NT to SF), but all were positive, indicating agreement in their rankings by each of the functional pairs in general. Only three pairs presented observed significance levels greater than .01 (NT to NF, NT to SF, ST to SF), meaning their Kendall tau statistics were not significant within the predetermined

TABLE 20

## KENDALL TAU CORRELATION FOR STRATEGIES BY VARIABLE PAIRS

Variable Pair	Tau/Sig	Variable Pair	Tau/Sig	Variable Pair	Tau-Sig
Dichotomous Pairs					
E to I Significance	1.0000 .000	S to N Significance	.9111 .000	T to F Significance	.5683 .000
		J to P Significance	.6889 .003		
Function Pairs					
ST to SF Significance	.4667 .030	ST to NF Significance	.7821 .001	ST to NT Significance	.6889 .003
NT to NF Significance	.5521 .015	NT to SF Significance	.3333 .090	NF to SF Significance	.5981 .009
Attitude Pairs					
IJ to IP Significance	.6444 .005	IJ to EP Significance	.6742 .004	IJ to EJ Significance	1.0000 .000
EJ to IP Significance	.6444 .005	EJ to EP Significance	.6742 .004	IP to EP Significance	.5842 .010
Types (N > 5)					
		ESTJ to ISTJ Significance	.7641 .001		

alpha of .01. That is, only these pairs of opposite functions would cause one to question the null hypothesis. Nevertheless, the observed significances, considered with the relatively high Kendall tau statistics, indicated a degree of agreement within the two function pairs. However, this agreement was not as strong as the agreement evident with the other function pairs. Only the NF to ST statistic showed weak correlation; the other five pairs showed significant, positive correlation.

Within the attitude groupings, the correlations ranged from 1.00 (IJ to EJ) to .5843 (IP to EP). The Kendall tau statistics of all attitude pairs were strongly significant and showed positive correlation. Of note, the 1.00 Kendall tau observed for the IJ to EJ showed that the two groups had identical rankings of the strategies, which was the case for the dichotomous preferences I to E as well.

The ISTJ comparison to ESTJ showed concurrence as well. These two types' rankings of the strategies correlated with a Kendall tau statistic of .7641 and an observed significance level of .001. Table 21 shows the manner in which these two types ranked the ten strategies in comparison with the total sample, and is included to permit the reader to visualize the agreement which occurred among the groups.

TABLE 21

RANKING COMPARISON FOR THE TOTAL SAMPLE--ISTJ AND ESTJ

Strategy	Total Rank	ISTJ Rank	ESTJ Rank
1. Combination	3	5	4
2. Coverage (Bottom Line)	1	2	1
3. Definite Action	6	6	7
4. Limits	7	7	8
5. Participation	4	3	3
6. Patience	8	9	6
7. Surprise	10	10	10
8. Reversal	9	8	9
9. Statistics	2	1	2
10. Step-by-step	5	4	5

Strategy Preferences Recap. In all, the results of the Kendall W tests and the Kendall tau tests showed the various types and groupings by dichotomous preferences, function pairs, and attitude pairs were in over-all agreement in rankings of the strategies, despite the differences expected due to psychological type.

Within the Kendall W results, only the EP group showed a result that would cause one to question agreement, and this was likely due to the small number of cases in that group. Within the Kendall tau results, only the NT to SF comparison yielded a result that would cause one not to reject the hypothesis that the rankings are positively



correlated. The remainder of the tests showed agreement, not disagreement, among the groups and groupings.

### Results of Tactics Preferences

General. As explained in Chapter III, the 33 tactics were regrouped into five major groupings by type of tactic. These are shown in Appendix G. Tactical preferences for all 84 useable data sets were tested using SPSSx NPAR TEST Kendall and mean rankings of the five major tactics were determined for each of the following groupings: E, I, S, N, T, F, J, and P; ST, SF, NF, and NT; IJ, IP, EP, and EJ; and ISTJ and ESTJ. The results of these tests determining mean ranks are abstracted. These results provided input to perform the Kendall tau test for correlation among the following groupings: EI, SN, TF, and JP; ST, SF, NF and NT; IJ, IP, EP, and EJ; and ISTJ and ESTJ.

Kendall W Results. The Kendall W results are displayed in Table 22. These show the average ranked score and the ranking of the rank scores for the total 84 cases in the data set. Each individual grouping was analyzed in the same manner as shown in Table 22. These are not duplicated here because they are intermediate statistics. However, the individual Kendall Ws and the significance levels of the 19 groupings are summarized in Table 23 on page 96.

TABLE 22  
KENDALL W RESULTS FOR THE TOTAL SAMPLE--  
TACTICAL PREFERENCES

Tactic Grouping	Average Ranked Score	Rank
1. Reliance upon Official/ Regulatory Tactics	2.35	1
2. Emotional/Conciliatory/ Motivational Tactics	3.05	3
3. Power/Urgency/Closure Tactics	3.38	5
4. Ritualistic/Structural Tactics	2.86	2
5. Manipulation of Scenario/ Procedure Tactics	3.36	4
Kendall W - .0793; Significance - .0000		

As can be seen from Table 22, the top ranked tactical grouping was "Reliance upon Official/Regulatory Tactics." Approximately a third of the respondents ranked a tactic in this group as their first preference. By far the preferred tactic was "D--Ask for lots of data" (about 25 percent of the total), followed by "E--Belabor fair and reasonable," both of which were in the first grouping. About 12.5 percent of the respondents ranked a "Ritualistic/Structural Tactic" as their first choice. The most common choice by these respondents was "S--Low ball offers." The third ranked tactical grouping was "Emotional/Conciliatory/Motivational Tactics," and about 8 percent of the

TABLE 23  
RESULTS OF KENDALL W TEST BY GROUPINGS--  
TACTICAL PREFERENCES

Grouping	N=	Kendall W	Significance Level
E	33	.0480	.1756
I	51	.1227	.0000
S	65	.0960	.0001
N	19	.0704	.2534
T	69	.0927	.0000
F	15	.0783	.3197
J	70	.1001	.0000
P	14	.0356	.7371
ST	56	.1248	.0000
SF	9	.0793	.5826
NF	6	.1455	.4792
NT	13	.0897	.3236
IJ	40	.1837	.0000
IP	11	.0235	.9049
EP	3	.4080	.2981
EJ	30	.0444	.2548
ISTJ	33	.2150	.0000
ESTJ	20	.1184	.0503
ALL	84	.0793	.0000

total respondents cited two tactics in this grouping as their top choices: "B--Allow face-saving exits" and "AC--Refer to your side's generosity." The fourth ranked tactical grouping was "Manipulation of Scenario/Procedure Tactics." Within this grouping, the most popular tactic was "I--Pick and choose the best deals." The least liked tactical grouping was "Power/Urgency/Closure Tactics." Within this grouping, two tactics vied for most popular: "AF--Take it or leave it" and V--Must be on contract by."

By referring to Table 23, one may note that the generally low Kendall Ws and the observed significance levels greater than .01 show general disagreement within the type groupings' rankings of the tactics. This could be restated as each individual within a type group assigned different rankings or preference to the tactics. For example, for the Es, the Kendall W was .0480, with a significance level of .1756, which is interpreted as high internal disagreement among the Es as to ranking of the tactics. The most disagreement among the rankings was displayed by Es, Ns, Fs, Ps; SFs, NTs; IPs and EJs. EPs showed a high Kendall W, indicating agreement among the rankings; the significance level of .2981 reflects the small sample size. Likewise, the NFs' Kendall W showed moderate agreement as to the rankings, but was also insignificant, probably because of the small sample size.

Only Is, Ss, Ts, Js; STs; and IJs displayed agreement that was statistically significant as to their rankings of the tactics.

Kendall Tau Results. Generally, the Kendall tau results and the significance levels displayed in Table 24 show a lack of correlation between psychological type groupings and preferences for tactics. The only significant correlation was I to E, which had a significantly positive correlation of .8000. The remainder of the groupings show no significant correlation. The lack of meaningful correlation is probably the result of lack of agreement as to the rankings of the tactics within one or both of the type groupings used in the Kendall tau measure of correlation.

Tactical Preferences Recap. Results of the Kendall W tests seemed to indicate an extraordinary amount of variability within the psychological type groups as to their preferences for tactics. The lack of agreement within the type groups was manifest throughout the Kendall W statistics. When the Kendall tau test was accomplished using the intermediate statistics produced by the Kendall W tests, correlations were generally not significant. One may conclude, in large measure, that this was the result of the over-all lack of agreement within the type groupings. The internal disagreement among the rankings of Es, Ns,

TABLE 24

## KENDALL TAU CORRELATION OF TACTICAL PREFERENCES BY VARIABLE PAIRS

Variable Pair	Tau/Sig	Variable Pair	Tau/Sig	Variable Pair	Tau/Sig
Dichotomous Pairs					
E to I Significance	.8000 .025	S to N Significance	.6000 .071	T to F Significance	.3162 .224
		J to P Significance	-.2000 .312		
Function Pairs					
ST to SF Significance	.0000 .500	ST to NF Significance	.6000 .071	ST to NT Significance	-.2000 .312
NT to NF Significance	-.2000 .312	NT to SF Significance	.4000 .164	NF to SF Significance	.4000 .164
Attitude Pairs					
IJ to IP Significance	.3162 .224	IJ to EP Significance	.2000 .312	IJ to EJ Significance	.6000 .071
EJ to EP Significance	-.1054 .400	EJ to EP Significance	.2000 .312	IP to EP Significance	.1054 .400
Types (N > 5)					
		ESTJ to ISTJ Significance	.4000 .164		

Fs, Ps; SFs, NTs; IPs and EJs was the largest. Consequently, those type groups which displayed agreement, the Is, Ss, Ts, Js; STs; and IJs, did not have a comparison group which agreed internally. Therefore, the Kendall tau correlations were ambiguous, but appeared not to establish any meaningful relationship between psychological type and preferences for tactics.

#### Results of Perceptions of Contractors' Tactics

General. As explained in Chapter III, the thirty-three tactics were regrouped into five major groupings by type of tactic. These are shown in Appendix G. Perceptions of contractors' tactics for all 84 useable data sets were tested using SPSSx NPAR TEST Kendall and mean rankings of the five major tactics were determined for each of the following groupings: E, I, S, N, T, F, J, and P; ST, SF, NF, and NT; IJ, IP, EP, and EJ; and ISTJ and ESTJ. The results of these tests determining mean ranks are merely abstracted. These results provided input to perform the Kendall tau test for correlation among the following groupings: EI, SN, TF, and JP; ST, SF, NF, and NT; IJ, IP, EP, and EJ; and ISTJ and ESTJ.

Kendall W Results. The over-all Kendall W results are displayed in Table 26, page 102. These show the average ranked score and the ranking of the rank scores

TABLE 25

KENDALL W RESULTS FOR THE TOTAL SAMPLE--  
PERCEPTIONS OF CONTRACTORS

Tactic Grouping	Average Ranked Score	Rank
1. Reliance upon Official/ Regulatory Tactics	4.01	5
2. Emotional/Conciliatory/ Motivational Tactics	3.67	4
3. Power/Urgency/Closure Tactics	2.38	2
4. Ritualistic/Structural Tactics	2.32	1
5. Manipulation of Scenario/ Procedure Tactics	2.63	3
Kendall W - .2754; Significance - .0000		

for the total 84 cases in the data set. Each individual grouping was analyzed in the same manner as shown in Table 25. These are not duplicated here because they are intermediate statistics. However, the individual Kendall Ws and the significance levels of the groupings are summarized in Table 26. The high significance level showed a strong agreement on which tactics contractors are perceived as most commonly using.

As can be seen from Table 25, the most frequently perceived tactical grouping is "Ritualistic/Structural Tactics." Approximately a third of the respondents cited a tactic in this group as their top perception of



TABLE 26  
RESULTS OF KENDALL W TEST BY GROUPINGS--  
PERCEPTIONS OF CONTRACTORS

Grouping	N=	Kendall W	Significance Level
E	33	.2827	.0000
I	51	.2806	.0000
S	65	.3073	.0001
N	19	.2132	.0028
T	69	.2941	.0000
F	15	.2427	.0057
J	70	.2872	.0000
P	14	.2447	.0083
ST	56	.3468	.0000
SF	9	.2075	.1131
NF	6	.3951	.0501
NT	13	.1778	.0553
IJ	40	.3140	.0000
IP	11	.2177	.0481
EP	3	.6000	.1257
EJ	30	.2625	.0000
ISTJ	33	.3476	.0000
ESTJ	20	.3374	.0000
ALL	84	.2754	.0000

contractors' tactics. By far the most perceived tactic was "Q--High ball offers" (about 25 percent of the total). The second ranked grouping was "Power/Urgency/Closure Tactics." About 16 percent of the respondents ranked two tactics within that grouping equally: "AE--Split the difference offers" and "V--Must be on contract by." The third ranked tactical grouping was "Manipulation of Scenario/Procedure Tactics." Within this grouping, the most commonly cited contractor tactic was "X--Negotiate with limited authority." The fourth ranked tactical grouping was "Emotional/Conciliatory/Motivational Tactics." Within this grouping, the most commonly cited tactic was "AC--Refer to your side's generosity." The least perceived tactical grouping was "Reliance upon Official/Regulatory Tactics." Within this grouping, the most frequently cited tactic was "E--Belabor fair and reasonable."

The majority of the groupings shown in Table 26 displayed statistically significant agreement about their perceptions of contractors' tactics. Exceptions to this generality are EP, SF, NF, and NT. EPs and NFs had large Kendall W values, signifying agreement; however, both groupings were not significant at the .01 level, probably as a result of their small sample sizes. SFs and NTs showed less agreement as to the rankings than any of the other groupings in the sample.

Kendall Tau Results. The Kendall tau results and the significance levels displayed in Table 27 showed generally moderate to high positive correlation in ranking the perceptions of contractor-used tactics among the various groups tested. The table displays the dichotomous groupings first, followed by function pairs, attitude pairs and finally the two types, ISTJ and ESTJ, with sufficient numbers to permit individual testing by type.

Within the dichotomous groupings E to I, as well as S to N, no difference in perceptions of contractor-used tactics was determined. The tau correlation of 1.00 showed perfect agreement between the rankings of contractors' tactics by the type groupings, which was significant at the .007 level. The T to F and J to P groupings showed correlations of .80, which indicates a slight disagreement in the way these groupings perceive contractors' tactics. Those two groupings were significant at the .025 level.

Within the functional pairs, the correlations ranged from .80 (ST to SF) to .20 (NT to SF), but all were positive, indicating agreement in how the psychological type groupings perceived contractors' tactics. The only functional pair with a statistically significant Kendall tau correlation was the ST to SF. The NT to SF correlation is interesting. The observed significance level of

TABLE 27

## KENDALL TAU CORRELATION OF PERCEPTIONS OF CONTRACTORS' TACTICS BY VARIABLE PAIRS

Variable Pair	Tau/Sig	Variable Pair	Tau/Sig	Variable Pair	Tau/Sig
Dichotomous Pairs					
I to E Significance	1.0000 .007	S to N Significance	1.0000 .007	T to F Significance	.8000 .025
		J to P Significance	.8000 .025		
Function Pairs					
ST to SF Significance	.8000 .025	ST to NF Significance	.6000 .071	ST to NT Significance	.4000 .164
NT to NF Significance	.4000 .164	NT to SF Significance	.2000 .312	NF to SF Significance	.4000 .164
Attitude Pairs					
IJ to IP Significance	.4000 .164	IJ to EP Significance	1.000 .007	IJ to EJ Significance	.8000 .025
EJ to IP Significance	.2000 .312	EJ to EP Significance	.8000 .025	IP to EP Significance	.4000 .164
Types (N > 5)					
		ESTJ to ISTJ Significance	.3586 .203		

.312 may likely be associated with the internal disagreement among the rankings of the NTs and SFs, shown in the Kendall W test (Table 26).

Within the attitude pairs, correlations ranged from 1.00 (IJ to EP) to .20 (EJ to IP). The Kendall tau statistics of all attitude pairs showed positive correlation; however, only the IJ to EP, IJ to EJ, and EJ to EP were statistically significant. Looking at the EJ to IJ correlation, one can see two groups which had relatively good internal agreement but, when compared to each other, showed little correlation. This means that the EJs' perceptions and the IJs' perceptions of contractors' tactics are different, but the difference is not statistically significant. This is probably also the case with the IJ to IP comparison, as well as the IP to EP comparison.

The two type comparisons individually showed significant internal agreement as to their rankings of contractor tactics. The types, when compared, showed disagreement between their rankings; however, the disagreement was not statistically significant.

Tactical Perceptions Recap. In all, the results of the Kendall W tests and the Kendall tau tests show the various types and groupings by dichotomous preferences, function pairs, and attitude pairs were generally in agreement in rankings of contractor-used tactics, despite the

differences expected due to psychological type. Those groupings with differences failed to yield statistically significant results when compared with other groups. This means the differences are not sufficient to permit a finding that psychological type is the independent variable, although there are some differences between the various groupings.

### Summary

This chapter presented the results of the analyses conducted on the data collected from the MBTI and the questionnaire on strategies and tactics. Results included descriptive and comparative data on the sample population, discussion of results of statistical tests performed on data pertaining to preferences in strategies and tactics, and government negotiators' perceptions of contractor tactics. The next chapter discusses conclusions and recommendations.

## V. Conclusions and Recommendations

This final chapter is divided into two parts, conclusions and recommendations. The first part presents conclusions based upon results and analysis of data discussed in Chapter IV. It is organized in the same order as the research questions and hypotheses stated in Chapter III. The second part presents recommendations for additional research which might prove useful in the future.

### Research Objective Conclusions

The research objective was to determine the psychological types of price analysts and contract negotiators and if a correlation existed between their psychological types and their preferred negotiation strategies and tactics.

First Research Question Conclusions. The first research question addressed the type distribution of price analysts and contracting officers and was structured to reject a null hypothesis that the type distributions of the price analysts and contracting officers were the same as the general population. This question was answered in two parts consisting of a descriptive analysis and a statistical analysis.

Descriptive Data Conclusions. Descriptive analysis portrayed a unique sample population because of its high representation of ISTJs, ESTJs and ENTJs, which together accounted for 63.34 percent of the sample. Within the general population, these types account for 28.29 percent of the total (34:50-51). No ESFPs were represented in the sample, whereas they represent 3.91 percent of the general population (34:50-51). The least frequently types which were represented in the sample were ENTP and ENFJ, each with 1 percent of the total, and INFJ, ISFP, ESTP and ENFP types, each of which accounted for 2 percent of the sample. One would expect a greater representation because together these types account for some 28.88 percent of the general population (34:50-51). In all, the sample, and the population from which it was drawn, appeared to be different from the general population.

Both male and female subsets within the sample displayed unique type distributions when compared with the general population. Within the male portion of the sample, 70.01 percent were ISTJ, ESTJ, and ENTJ, compared to 36.39 percent for those types in the general male population (34:50-51). The females were 60.00 percent ESTJ, ISTJ and ENTJ, compared with 25.01 percent for females in the general population (34:50-51).

Analysis of primary dichotomies and functional and attitude pairs showed a sample unique for its concentration



of Is, Ts, and Js, and STs and IJs. The male sample was more clearly dominated by the introverted attitude (71.01 percent), whereas the females were more extraverted (56.67 percent). Myers estimated that Es comprised three-fourths of the population; the total sample exhibited a two-thirds I to one-third E distribution (34:45). The sample was quite similar to Myers' estimates of 75 percent of the population preferring S, showing 73.7 percent preferred sensing over intuiting (34:45). On the TF dimension, the sample differed in both males and females. Myers estimated 60 percent of males and 35 percent of females preferred thinking, whereas 84.06 of the sample males and 73.33 percent of the females were Ts (34:45). The sample was 80.8 percent Js, compared with Myers' estimate of 55 to 60 percent Js within the general population. On the basis of the descriptive data alone, it was tentatively concluded that the sample would prove to be significantly different from the general population.

Statistical Data Conclusions. In comparison with the CAPT data base for the general population, the sample displayed a significantly higher frequency of ISTJs and ESTJs. In comparison with the CAPT data base for managers, the sample was significantly higher in ISTJs, but ESTJs were approximately as predicted. Both comparisons revealed a significant deficit within the sample of ENFPs, ENTJs, ESFJs, ENFJs, ESTPs, and ESFPs.

Analyses of the primary dichotomies using the CAPT data bank for the general population as a baseline revealed a sample that was unique for its high concentration of Is, Ss, Ts, and Js when considered in total. However, the females were unique only in their trend toward the thinking dimension. Analyses of paired groupings by function types and attitude types for the total sample revealed a significant trend toward sensing paired with thinking, and introversion paired with judging. The sample also displayed significant decrements in the SF, NT and NF function pairs, as well as in the IP and EJ attitude pairs.

#### Recap of First Question Conclusions.

Descriptive analysis and statistical tests with significances of .000 confirmed rejecting the null hypothesis, which asserted that the psychological type distribution of contracting officers and price analysts within the total sample was the same as that of the general population. This was not the case when one segregated the sample by gender, however. The males differed significantly from the general population for males, but the females were not significantly different from the female population.

#### The Predominant Types in the Work Setting.

If one were to characterize the typical government negotiator on the basis of the sample, the individual would be a sensor paired with thinking who has a preference for judgment. His/her fascination with facts that can be

verified empirically and logically would attract him/her to the contracting profession, where unemotional rationality and scrupulous attention to detail are prized (18:203-209; 34:80; 35:5). He/she would also be patient with mastering and complying with the maze of regulations governing his/her duties (34:80). These qualities have combined to place -STJ types in business and administrative fields in great proportions (34:244-268). The dynamics of the type characteristics in the work setting are described in detail in Appendices B, C and E.

As a negotiator, the -STJ would examine issues in detail, present his/her position with impersonal clarity, and push for closure (34:81-82). An affinity for concrete, quantitative data to substantiate concessions would be congruent with psychological type, and is one possible explanation for the sample's preference for the tactic "D--Ask for lots of data" (21:134). His/her lack of sensitivity to the other party's feelings and values could generate misunderstandings and create an impression of cool intolerance, so this person must be exceptionally aware of communication difficulties springing from type disparities (34:82; 35:209-210; 51:34).

Second Research Question Conclusions. The second research question sought to determine whether a definitive pattern of negotiation strategies relating to type existed

among the survey participants and was structured to reject a null hypothesis that no pattern relating to type existed. This question was answered in two parts consisting of a statistical test for agreement (Kendall W) among each type and a test for correlation (Kendall tau) between the various types. To reject the null hypothesis, the Kendall W test must show significant agreement within each type, and the Kendall tau test a negative to low correlation between the types with a significance of .01 or better.

Statistical Analysis Conclusions. In the Kendall W test, survey participants demonstrated strong consensus in their preferences for strategies within the total sample as well as within each type distinction. The Kendall tau test showed no significant differences in preferences for strategies as a function of type or any of the type distinctions. In fact, in most cases the differing types demonstrated extraordinary agreement in their preferences. The results of E to I comparison actually confirmed complete agreement between the two type groupings at a significance level of .000, and these types are opposites. What this means is that the ranking of the introverts in total, when compared with the rankings of the extraverts in total, were identical. The test technique could well have masked individual differences, hence one cannot speculate that each member of the sample agreed

entirely. However, the collective results were so alike that no differences could be discerned.

Recap of Second Research Question Conclusions. There were no patterns of differences in preferences for strategies as a function of type, thus the null hypothesis was not rejected.

Third Research Question Conclusions. The third research question sought to determine whether a definitive pattern of negotiation tactics relating to type existed among the survey participants and was structured to reject a null hypothesis that no pattern relating to type existed. This question was answered in two parts consisting of a statistical test for agreement (Kendall W) among each type and a test for correlation (Kendall tau) between the various types. To reject the null hypothesis, the Kendall W test must show significant agreement within each type, and the Kendall tau test a negative to low correlation between the types with a significance of .01 or better.

Statistical Analyses Conclusions. In the Kendall W test, survey participants exhibited a wide variety of responses. Variability within the types and type groupings was evident in the low Kendall Ws and observed significance levels far greater than .01. The resulting Kendall tau tests showed inconclusive and ambiguous results. Where the Kendall tau tests indicated low

correlation between the types or type groupings, the significance levels far exceeded the predetermined alpha level of .01. Accordingly, no conclusion could be drawn as to the relationship between type and preferences for tactics. As an aside, the researcher notes one intermediate statistic of interest. By far the single most preferred tactic was "D--Ask for lots of data," a preference which would be expected to come from a group dominated by -STJs. However, to conclude this is solely a function of type would be erroneous since public law and the regulations governing acquisition require the government negotiator to obtain large amounts of detailed data from contractors.

Recap of Third Research Question Con-  
clusions. Evidence furnished by the statistical analyses failed to support rejecting the null hypothesis. In fact, hardly any conclusion was possible in light of the mixed results of the various statistical tests. The high degree of internal disagreement within the type groups displayed in the Kendall W test could have been a function of the large number of choices in tactics offered by the survey, which may have complicated achieving agreement within the type groups. The internal disagreement within the types resulting from the wide range of choices could have caused the inconclusive results of the subsequent Kendall tau test for correlation.

Fourth Research Question Conclusions. The fourth research question sought to determine whether a typical pattern of perceptions of contractors' tactics existed among the survey participants and was structured to reject a null hypothesis that no pattern relating to type existed. This question was answered in two parts consisting of a statistical test for agreement (Kendall W) among each type and a test for correlation (Kendall tau) between the various types. To reject the null hypothesis, the Kendall W test must show significant agreement within each type, and the Kendall tau test a negative to low correlation between the types with a significance of .01 or better.

Statistical Analyses Conclusions. In the Kendall W test, survey participants demonstrated strong consensus in their perceptions of contractor-employed tactics within the total sample as well as within each type distinction. However, although the Kendall tau test resulted in low or negative correlations when inter-type rankings were analyzed, the observed significance levels far exceeded the predetermined alpha level of .01. Consequently, no significant differences in perceptions of contractor-used tactics as a function of psychological type or any of the type distinctions resulted.

Recap of Fourth Research Question Conclusions. There were no discernable patterns of perceptions

of contractors' tactics as a function of type, thus the null hypothesis was not rejected.

Summary of Research Questions Conclusions. Analysis of the sample portrayed a unique distribution of types within the contracting field, and painted a clear picture of the typical contracting officer and price analyst as an -STJ. Analysis was unable to confirm this individual's preferences for strategies and tactics, or perceptions of contractors' tactics, as functions of psychological type. Results in preferences for tactics were ambiguous and could have been the result of the large variety of tactical options presented to survey participants. Interim results of tactical rankings did display some consistency with type theory, such as the most favored tactic being related to the predominant type, but there could be powerful external causes which influenced the ranking of this response as well. Respondents' perceptions of contractors' tactics failed to produce a set of useful conclusions relating to type, but their responses did underscore the predominantly negative manner in which contract negotiators tend to experience contractors. One should note the latter was also a finding of Catlin and Faenza (5:80).

Summary of Research  
Objective Conclusions

In all, the research objective was partially satisfied. The sample did identify the contract negotiators'



types, and the distribution of types within the population, as significantly unique. However, no conclusions relating psychological type to preferred negotiating strategies and tactics, nor to negotiators' perceptions of contractor-used tactics, were possible.

As a probable explanation for the ambiguity of the results, one may note that the questionnaire on strategies and tactics presented preselected choices which, when reviewed in the light of the behavioral sciences' findings in the conflict literature, all belonged to the win-lose or competitive approach. By failing to offer a range of choices that would have allowed expression of the differing preferences of the psychological types, the questionnaire limited the results to competitive solutions only. Even if sets of strategies, tactics, and perceptions as functions of psychological types had been identified, all would have belonged to the one negotiation approach of win-lose only. In this context, the relative preference for one win-lose strategy or tactic over another is meaningless because it offers no predictive power. Whatever the strategy or tactic, the approach would be win-lose.

The researcher was particularly eager to find evidence connecting dominant psychological attitude with competitive versus integrative approaches to resolving conflict. The literature in the behavioral sciences pointed to a connection between extraversion and win-win

approaches, and introversion and win-lose approaches (24). On the surface, the notion that the predominance of introverted types within the contracting profession had affected the adversarial nature of the government-contractor relationship was intuitively appealing. However, test results in the E and I dimensions showed frankly astonishing unanimity between the two opposing attitudes in preferences for strategies and tactics. This further underscored the flaw of offering only win-lose choices to respondents in the questionnaire. What one may speculate, however, is the commonality and acceptability of win-lose approaches attracted the introverted STJ type to the contracting profession. That the contracting organizations' norms have been defined as win-lose by the dominant, control-conscious introverted STJ is possible, but is certainly beyond the scope of the research.

Other factors influencing responses are the strongly regulated internal and external environments in which federal acquisition takes place. So strictly is government acquisition controlled that little free expression in resolving contractual conflicts is allowed. For example, although the benefits of an integrative approach to negotiations may appeal to the individual government negotiator and manager, the regulatory guidance clearly specifies that acquisition should be competitive. This pressure for competition in the marketplace may likely be

translated via organizational norms as a competitive approach to the negotiation process itself. Likewise, the regulatory environment has unavoidably led to standardized procedures and, consequently, uniform behavior within contracting. Regulations could constrain individuals' preferences, which are related to psychological type, if they were E, N, F or P types. As a practical matter, natural preferences of the psychological types could be denied legitimate expression in such a rigid work setting. It therefore appears the structural model of conflict-handling could prove more fruitful than the process model in explaining the government negotiation process since it focuses on environmental determinants of behavior (23:61).

One notes that the predominance of the -STJ in such a work setting is no accident (26:1007), but hesitates to hazard a guess as to whether the -STJs' attraction to the contracting profession is a cause or an effect. Descriptive demographic analyses by type confirmed a general decrement of N, F and P types within the sample. These types, when they were present, were predominantly in the entering grade levels. Because Ns, Fs and Ps do not share the -STJ's affinity for empirical facts, strict rationality, or high formality of job structure, their staying to make a career of the contracting specialty appears unlikely in the light of psychological type theory (35:157-174). The alternative would be to change or adapt

to the organization's -STJ influence to maintain employment. Because the distribution of the types within the pay grades did not have direct bearing upon the research objective, this information is only reported in Appendices H through J.

### Recommendations

The researcher believes there is a significant relationship between psychological type and preferred modes of negotiation which was unavoidably masked by the questionnaire. This research should be continued with a questionnaire structured to permit choices consistent with psychological type theory. If no significant results are obtained, then the research should be pursued from the perspective of the structural model, which cites external environmental factors as determinants of behavior (47).

A study designed to determine whether the win-lose approach to negotiations is a cause or an effect of the prevailing psychological type in the contracting profession could yield useful suggestions on whether the contracting field could be structured to accommodate integrative, problem-solving solutions to contracting requirements.

Thomas states the consequence of a win-lose approach to conflict resolution is residual frustration and the likelihood that conflict will recur (47:909). If this is true, then the consequence of win-lose approaches to

negotiations has cost implications for the government. A study designed to detect whether there is a causal relationship between the negotiation mode and subsequent contractual conflict as evidenced by changes or defaults could tie the negotiating mode to an estimated cost of fostering adversarial relationships with contractors.

## Appendix A: Jung's Description of the Types

In describing the eight types, Jung cautions his reader that his descriptions are "Galtonesque family portraits" which exaggerate distinctions in order to illustrate differences (18:266). It would be well to consider Jung's types with this caution kept freshly in mind.

### The Extraverted Thinking Type

The extraverted thinker subjects all action to relentless intellectual discipline under the control of tangible or intangible objective reality. To this perception of reality all other considerations are subjugated. He imparts meaning to the objective intellectual rigor, thus his life, as well as the lives of those around him, all of which are measured by his intellectual law as a primary, quasi-religious verity (18:198). In the extreme, he represses feeling intensely, and all personal considerations, including the welfare of his family or of his own health, may be sacrificed (18:199-201). Ordinarily, however, his thinking is positive, creative and productive, leading progressively to the discovery of new facts and empirical relationships (18:203-205). Darwin is an example of the normal extraverted thinking type (18:240).

### The Extraverted Feeling Type

The extraverted feeling type is usually female. Her life is bonded by the extraverted attitude to objects, and her feelings are generally in accord with objective reality. This type "follows her feeling as a guide throughout life," according to Jung, and thinking assumes a role secondary to the values imparted by her feeling (18:209-211). A pathological state ensues when the personality loses grasp of its boundaries and the individual no longer is able to differentiate between feeling states, which are dynamic, and the subject herself (18:210).

### The Extraverted Sensation Type

"No other human type can equal the extraverted sensation type in realism," says Jung. "His sense for objective facts is extraordinarily developed" (18:217). This type, normally male, focuses his entire libido upon external, tangible reality, regarding anything coming from an internal source with suspicion. His social behavior and deportment are apt to be congenial and tasteful. His absorption with objects may manifest itself as exploitation in a pathological mode. In the extreme, the unconscious of this type becomes opposed to the conscious, and intuition then is projected as wild suspicions, jealousies, and phobias (18:219).

### The Extraverted Intuitive Type

This typology is difficult to discern because the extraversion overwhelms an observer and often masks the intuitive print--vision and expectancy at a conscious level (18:220). The individual of this type is centered upon objects, consistent with extraversion, but intuition works to translate his perception of objects into a creative dimension of images and relations between things rather than the identity of things themselves. "Because he is always seeking out new possibilities, stable conditions suffocate him," according to Jung (18:223). He is intense and enthusiastic in his search for new possibilities, but equally apt to abandon an object once he fathoms its potential. The extraverted intuitive is culturally and economically significant because he is the natural initiator of new enterprises. In the extreme, he may become ruthless, superior, and compulsive.

### The Introverted Thinking Type

The introverted thinker is absorbed in his subjective intellectualizing of ideas and follows them inward with fierce discipline. His relations with objects, including people, are somewhat negative while his relations with his internal world of ideas are positive and synthetic. It is the content of his thought that differs most markedly from the extraverted thinker's. The introverted thinker is fascinated with abstractions, while the extraverted



thinker is totally committed to objective reality. If the type is intensified, his thinking may become mystical and ungainly. The type is characterized by application of a high degree of thought to every problem in his life. Jung cites several examples of this type: Kant, Nietzsche and Cuvier (18:240-245).

#### The Introverted Feeling Type

As is true with extraverted feeling types, the introverted feeling type is usually female. Although the introverted feeling type appears to devalue objects, she fastens deeply upon her subjective evaluation of objects, primarily people, usually her children, and her feelings are quite intensive (18:248-249). However, the detachment characteristics of introverts makes her appear cold and indifferent to objects and people. In the extreme, this may become overpowering and controlling in the lives of her family members, and the pathological state is marked by delusions and neuroses (18:249-250).

#### The Introverted Sensation Type

The introverted sensation type responds to events as happenings and is centered on his internal response excited by stimulating events. Because of the highly subjective nature of his response, there may be no direct proportional relationship between the object and the sensation which the object evokes in the individual. To the outer

world, he appears calm and self-controlled and generally works to promote harmony. His inner world, however, is impressionistic and verges on chaotic, primarily because he is alienated from objective reality (18:257). In the extreme, he cannot distinguish his subjective impressions from objective reality at all. This type is best illustrated by the prototype of an artist.

#### The Introverted Intuitive Type

This type, too, is typified by the artist, but also is typified by prophetic thinkers and mystical dreamers. Because of his introverted orientation, "perception is his main problem," according to Jung (18:261). He also bears the characteristic disassociation of the introvert from objective reality, and the subjectivity of his life experience may make him an enigmatic "misunderstood genius" to his circle of immediate friends. Introversion and intuition combine to make communication extraordinarily difficult for this type.

Appendix B: Comparison of Jung's Types  
to Myers' Typology

MBTI	JUNG	MBTI	JUNG	MBTI	JUNG	MBTI	JUNG
ISTJ	IS	ISFJ	IS	INFJ	IN	INTJ	IN
ISTP	IT	ISFP	IF	INFP	IF	INTP	IT
ESTP	ES	ESFP	ES	ENFP	EN	ENTP	EN
ESTJ	ET	ESFJ	EF	ENFJ	EF	ENTJ	ET

NOTE: Although Jung did not use the Myers notation, it is used here for brevity and to facilitate comparison. IS is the introverted sensation type; IN is the introverted intuitive type; IT is the introverted thinking type; IF is the introverted feeling type; ES is the extraverted sensation type; EN is the extraverted intuitive type; ET is the extraverted thinking type; and EF is the extraverted feeling type (18; 35)

### Appendix C: Description of the Types in the Work Setting

Because Myers integrated the effect of the auxiliary function, her understanding of the types extends Jung's discussion to include the impact of the auxiliary functions on type behavior. The reader is advised to consult Myers' work, Gifts Differing, for a thorough discussion of each type, for the theory has rich applications for counseling, education, and occupational choices.

A brief description of the types extracted from Myers is included here only as much as it has typically been found to describe behavior in a work setting. Much information of interest has necessarily been omitted.

#### EFFECTS OF EACH PREFERENCE IN WORK SITUATIONS (33:17-18; 34:79-82; 35:163-164)

##### EXTRAVERTS

Like variety and action.

Tend to be faster, dislike complicated procedures.

Are often good at greeting people.

Are often impatient with long slow jobs.

##### INTROVERTS

Like quiet for concentration.

Tend to be careful with details, dislike sweeping statements.

Have trouble remembering names and faces.

Tend not to mind working on one project for a long time uninterruptedly.

Are interested in the results of their job, in getting it done and in how other people do it.

Often do not mind the interruption of answering the telephone.

Often act quickly, sometimes without thinking.

Like to have people around.

Usually communicate freely.

#### THINKING TYPES

Do not show emotion readily and are often uncomfortable dealing with people's feelings.

May hurt people's feelings without knowing it.

Like analysis and putting things into logical order. Can get along without harmony.

Tend to decide impersonally, sometimes paying insufficient attention to people's wishes.

Need to be treated fairly.

Are able to reprimand people or fire them when necessary.

Are more analytically oriented--respond more easily to people's thoughts.

Tend to be firm-minded.

Are interested in the idea behind their job.

Dislike telephone intrusions and interruptions.

Like to think a lot before they act, sometimes without acting.

Work contentedly alone.

Have some problems in communicating.

#### FEELING TYPES

Tend to be very aware of other people and their feelings.

Enjoy pleasing people, even in unimportant things.

Like harmony. Efficiency may be badly disturbed by office feuds.

Often let decisions be influenced by their own or other people's personal likes and wishes.

Need occasional praise.

Dislike telling people unpleasant things.

Are more people-oriented--respond more easily to people's values.

Tend to be sympathetic.

### SENSING TYPES

Dislike new problems unless there are standard ways to solve them.

Like an established way of doing things.

Enjoy using skills already learned more than learning new ones.

Work more steadily, with realistic idea of how long it will take.

Usually reach a conclusion step by step.

Are patient with routine details.

Are not often inspired, and rarely trust the inspiration when they are.

Seldom make errors of fact.

Tend to be good at precise work.

### JUDGING TYPES

Work best when they can plan their work and follow the plan.

Like to get things settled and finished.

May decide things too quickly.

May dislike to interrupt the project they are on for a more urgent one.

### INTUITIVE TYPES

Like solving new problems.

Dislike doing the same thing repeatedly.

Enjoy learning a new skill more than using it.

Work in bursts of energy powered by enthusiasm, with slack periods in between.

Reach a conclusion quickly.

Are patient with complicated situations.

Follow their inspirations, good or bad.

Frequently make errors of fact.

Dislike taking time for precision.

### PERCEPTIVE TYPES

Adapt well to changing situations.

Do not mind leaving things open for alterations.

May have trouble making decisions.

May start too many projects and have difficulty in finishing them.

May not notice new things  
that need to be done.

Want only the essentials  
needed to begin their work.

Tend to be satisfied once  
they reach a judgment on a  
thing, situation, or person.

May postpone unpleasant jobs.

Want to know all about a new  
job.

Tend to be curious and wel-  
come new light on a thing,  
situation, or person.

Appendix D: Complimentarity of the Types (35:5)

INTUITIVES NEED SENSING  
TYPES:

To bring up pertinent facts

To apply experience to problems

To read the fine print in a contract

To note what needs attention now

To have patience

To keep track of essential details

To face difficulties with realism

To remind that the jobs of the present are important

SENSING TYPES NEED  
INTUITIVES:

To bring up new possibilities

To supply ingenuity on problems

To read the signs of coming change

To see how to prepare for the future

To have enthusiasm

To watch for new essentials

To tackle difficulties with zest

To show that the jobs of the future are worth looking for

FEELING TYPES NEED THINKERS:

To analyze

To organize

To find the flaws in advance

To reform what needs reforming

To hold consistently to policy

To weigh "the law and the evidence"

To fire people when necessary

To stand firm against opposition

THINKERS NEED FEELING TYPES:

To persuade

To conciliate

To forecast how others will feel

To arouse enthusiasm

To teach

To sell

To advertise

To appreciate the thinker



## Appendix E: Myers' Recommendations on Cross-type Communication

In relating to individuals across the negotiating table, Myers' recommendations for crossing type barriers in communication are of interest. The impersonality and logical focus of thinkers is often stated bluntly and so forcefully that a feeling type perceives himself attacked, which makes agreement impossible. However, feeling types are powerfully driven to attain harmony and, says Myers, "if given a chance, they would rather agree than not" (35:209). Thus, communication with a feeling type should be stated in terms of feeling, and criticism should always be preceded by a restatement of points on which agreement exists. Conversely, communication with a thinking type should be logical, orderly, factual, and demonstrate respect "for the thinker's estimation of the costs of the consequences" (35:209). Myers recommends feeling types inform thinkers of their feelings as a fact so the thinking types may include feelings "among the causes from which they can expect effects" (35:209).

"Communication between sensing and intuitive types often breaks down before it gets started" notes Myers (35:210). Therefore, it is extremely important for intuitive types to state explicitly what they are discussing and to proceed in a clear manner through the logic of the

message. The intuitive should give notice when changing the subject, and not switch back and forth between subjects (35:210). It is important for the intuitive type to finish one subject before moving explicitly on to the next (35:210). Sensing types should not dismiss intuitor's ideas as non-sense simply because the intuitor is mistaken on a fact, but should contribute the fact as an addition to the subject rather than a refutation of the idea (35:210). According to Myers:

To be useful, a communication needs to be listened to, understood, and considered without hostility. . . . The presentation of a good idea can usually be designed to suit the listener's interests. . . . A communication may be listened to and understood but still fail its purpose if it arouses antagonism. . . . Any attack is likely to provoke spirited defensiveness and lead to a divisive struggle between colleagues instead of a united attack on the problem. If the dissenter will refrain from condemning the incomplete solution and simply stress the unsolved part of the problem, the others can consider the dissenter's comments with no loss of face and can broaden or change their solution accordingly. This technique works whether or not members of the group know each other's types. (35:174)

When the communication process is viewed as one of creative potential for agreement, in which all parties have valuable contributions to make, each type may contribute its strengths toward achieving and preserving the most important advantages of both parties (35:210). In this context, differences become an asset to be harvested in the goals of reaching agreement, and disagreements are less aggravating.

# Appendix F: Grouped Form G Statistics

<u>MBTI Type</u>	<u>Weighted Value</u>	<u>Jungian Type</u>	<u>Grouped Test Statistic</u>
ISTJ	13.5915	IS	19.73
ISFJ	6.1398		
INFJ	3.2457	IN	9.47
INTJ	6.2232		
ISTP	4.9893	IT	10.81
INTP	5.8245		
ISFP	3.3579	IF	8.54
INFP	5.1804		
ESTP	4.9050	ES	8.78
ESFP	3.8718		
ENFP	6.6522	FN	12.62
ENTP	5.9664		
ESTJ	12.6879	ET	19.02
ENTJ	6.3327		
ESFJ	6.2271	EF	10.03
ENFJ	3.8046		

## NOTES:

1. Numbers were rounded during computations to facilitate a statistic sum of 100 percent. The table in the Manual was adjusted to sum to 100 percent. The female sample summed to 100 percent.

2. Calculations were performed as follows of each of the 16 types to determine the weighted values: (% type in male data base x 69) + (% type in female data base x 30) = weighted value by type.

## Appendix G: Grouped Tactics

### Reliance upon Official/Regulatory Tactics

- D - Ask for lots of data
- E - Belabor fair & reasonable
- F - Bogey--constrained by budget limitations
- AB - Refer to the firm's past poor performance

### Emotional/Conciliatory/Motivational Tactics

- B - Allow face-saving exits
- C - Appeal to patriotism
- M - Embarrass your opponent
- U - Massage opponent's ego
- Z - Personal attack
- AC - Refer to your side's generosity

### Power/Urgency/Closure Tactics

- H - Change negotiators
- T - Make an offer they must refuse
- V - Must be on contract by (date)
- W - My plane leaves at (time) o'clock
- AD - Reverse auctioning
- AE - Split the difference offers
- AF - Take it or leave it
- AG - Threaten to walk out
- J - Deadlock the negotiations

### Ritualistic Structural Tactics

- G - Call frequent caucuses
- P - Good guy bad guy roles
- Q - High ball offers
- S - Low ball offers
- Y - Off the record discussions

### Manipulation of Scenario or Procedures

- A - Adjust the thermostat
- I - Pick and choose the best deals
- K - Deliberately leave errors in offers

N - Escalate to opponent's boss  
O - Escalate to your boss  
R - Impose no smoking rule  
X - Negotiate with limited authority  
AA - Play hard to get

Appendix H: Type Distribution within Contracting by  
Grade Level and Gender

Types	Males			Females		
	GS7-9	GS11-13	GM14-15	GS7-9	GS11-13	GM14-15
ISTJ	0	27	6	0	5	0
ISFJ	0	1	2	0	2	0
INFJ	0	1	0	0	1	0
INTJ	0	2	0	0	1	0
ISTP	1	2	0	0	0	0
ISFP	0	2	0	0	0	0
INFP	0	2	0	0	2	0
INTP	0	3	0	0	2	0
ESTP	0	2	0	0	0	0
ESFP	0	0	0	0	0	0
ENFP	0	0	0	1	1	0
ENTP	0	0	0	0	1	0
ESTJ	0	10	1	1	8	0
ESFJ	0	3	0	0	0	0
ENFJ	0	0	0	0	1	0
ENTJ	2	1	1	0	4	0

Appendix I. Type Distribution within Contracting by Age

Type	00-29	30-39	40-49	50-65
ISTJ	3	13	8	14
ISFJ	0	2	1	2
INFJ	1	1	0	0
INTJ	0	3	0	0
ISTP	0	3	0	0
ISFP	1	1	0	0
INFP	0	3	1	0
INTP	0	5	0	0
ESTP	0	1	0	1
ESFP	0	0	0	0
ENFP	2	0	0	0
ENTP	0	0	0	1
ESTJ	4	7	4	5
ESFJ	1	1	0	1
ENFJ	0	1	0	0
ENTJ	0	4	4	0

Appendix J. Type Distribution within Contracting by  
Years in Contracting

Type	00-09	10-19	20-40
ISTJ	13	7	18
ISFJ	2	1	2
INFJ	1	1	0
INTJ	1	2	0
ISTP	2	1	0
ISFP	1	1	0
INFP	3	1	0
INTP	5	0	0
ESTP	2	0	0
ESFP	0	0	0
ENFP	2	0	0
ENTP	0	0	1
ESTJ	14	3	3
ESFJ	2	0	1
ENFJ	0	1	0
ENTJ	5	3	0





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR FORCE MANPOWER AND PERSONNEL CENTER  
RANDOLPH AIR FORCE BASE TX 78150-6001

File. 5-  
DAC

Appendix K: Request for Survey Approval

19 MAR 86

REPLY TO  
ATTN OF DPMYOS

SUBJECT Request for Survey Approval (Your Ltr, 4 Feb 86)


TO AFIT/XPX

1. The request for approval of the survey entitled "Effect of Temperament Types on Negotiating Strategies and Tactics of USAF Contracting Officers" by Capt Johnstone has been received. The Air Force Civilian Personnel Management Center (AFCPMC/DPCPO) here requests that the student coordinate the survey with the labor relations officer in the Civilian Personnel Office at Wright-Patterson AFB.

2. Contingent upon completing this coordination, a USAF Survey Control Number (SCN) of 86-38 is assigned and expires 31 Dec 86. The SCN must be displayed on each survey in the upper right of the front cover or first page.

3. If you have any further questions or desire additional assistance, please contact Capt Daley, AUTOVON 487-5680.

FOR THE COMMANDER

  
CHARLES H. HAMILTON, GM-13  
Chief, Personnel Survey Branch

cc: AFIT/LSH  
AFIT/LSMA

## REQUEST FOR APPROVAL OF SURVEY

AFIT/GCM/LSM  
Major Charan M. Johnstone

1. TITLE OF PLANNED SURVEY.

"Effect of Temperament Types on Negotiating Strategies and Tactics of USAF Contracting Officers"

2. NAME AND ADDRESS OF INDIVIDUAL REQUESTING APPROVAL.

Survey Control Officer

AFIT/LSH, Dr. Robert Weaver (AUTOVON 785-6761)  
Wright-Patterson AFB OH 45433

Thesis Advisor

AFIT/LSMA, Mr. Dennis E. Campbell (AUTOVON 785-4149)  
Wright-Patterson AFB OH 45433

3. STATEMENT OF SURVEY PROBLEM, SURVEY PURPOSE, PREFERRED ADMINISTRATION TIME FRAME, AND JUSTIFICATION.

a. SURVEY PROBLEM.

The process of contract award within the United States Air Force has come under increased scrutiny during the past five years because errors in prices paid for weapons systems and spare parts have been criticized as excessive. To combat the public's perception of incompetence, the military services have increased their attention to the manner in which prices are determined to be fair and reasonable. Prices are determined by negotiations between the contractor and the government for most of the money spent on systems and spares. One factor which is recognized in the literature about negotiation as having a significant impact on price is how well the negotiator understands and harnesses the psychology of the opposing team as well as his own. This research proposes to survey Air Force Systems Command contracting officers and price negotiators who are located at Wright-Patterson AFB to determine if their preferred negotiation methods are correlated with their psychological types. To accomplish this, two instruments will be used: the first is the Myers-Briggs Type Indicator (MBTI),

which is used to determine psychological type; and the second is a questionnaire, which will ask for preferred negotiation strategies and tactics. The MBTI, which was developed by Katharine Briggs and Isabel Briggs Myers, expands Carl G. Jung's theory of psychological type. The instrument has gained acceptance as a tool to predict how people perceive information and how they reach conclusions. The theory of psychological type and the MBTI could prove to have utility in predicting and influencing the results of negotiations.

b. SURVEY PURPOSE.

The intent of these instruments is to gather sufficient data to correlate contracting officer-identified negotiation strategies and tactics with psychological types as distinguished by the MBTI.

c. PREFERRED ADMINISTRATION TIME FRAME.

As soon as practical. Results of these instruments must be gathered by April 1986 to permit time to conduct analyses.

4. HYPOTHESES TO BE TESTED BY THE SURVEY.

Because this research is exploratory in nature, an hypothesis approach is not used. The research question to be answered is: "What negotiation strategies and tactics do current Air Force contract negotiators use and are these strategies and tactics predictable as a function of psychological type?"

5. POPULATION TO BE SURVEYED.

a. DESCRIPTION OF POPULATION TO INCLUDE MILITARY AND CIVILIAN EMPLOYMENT STATUS AND BY WHOM EMPLOYED.

Military and civilian contract negotiators in Air Force Systems Command located at Wright-Patterson AFB OH.

b. SIZE OF POPULATION.

Approximately 500.

## 6. DESCRIPTION AND SIZE OF SAMPLE SELECTED.

Sample will include all price analysts (approximately 35 each) and a randomly selected stratified sample taken from the total population of contract negotiators and contracting officers.

## 7. METHOD OF SELECTION OF THE SAMPLE.

Sample will be randomly selected, approximately 50 percent of the population.

## 8. METHOD OF CONDUCTING THE SURVEY.

Instruments will be distributed to respondents through an OPR identified by the Director of Contracting and Manufacturing (PM) at Aeronautical Systems Division. Respondents will remain anonymous and completed instruments will be individually return mailed.

## 9. DESCRIPTION OF THE STATISTICAL ANALYSIS PLAN OR OTHER METHOD OF EVALUATION.

Contingency table analysis using the statistical package for the social sciences (SPSS).

## 10. METHOD OF TABULATING SURVEY RESULTS.

Automated and manual coding of responses into categories and histogram analysis and reporting.

## 11. USE AND DISPOSITION OF RESULTS.

The research results will be basic inputs to a published Air Force Institute of Technology School of Systems and Logistics student thesis. The results may be released in compliance with AFR 12-30.

## 12. COMMAND APPROVAL CONTACT POINT.

Not applicable.

## 13. ESTIMATED COST OF SURVEY.

## a. MAN-HOUR COSTS: (avg. hourly cost) (pop) (time)

Basic Pay*:	Hourly Rate:	Population:	Time:	Total:
GM-14/GM-13	\$22.60	17% (43)	1.5 hr	\$1,458.00
GS-12 PCOs	17.43	31% (77)	1.5 hr	2,013.00
GS-07/GS-12 COs	13.09	52% (130)	1.5 hr	2,553.00
<u>TOTAL</u>		<u>100% (250)</u>		<u>\$6,024.00</u>

\*Average estimates obtained from ACFC/M on 23 Jan 86 and  
Civilian Personnel Office on 28 Jan 86.

## b. SUPPLY COSTS: (paper and envelopes)

5 page survey, 250 copies (1.7 cents/page)	= \$	21.25
1 page cover letter, 250 copies (1.7 cents/page)	=	4.25
2 envelopes, 12 cents together, 250 packages	=	30.00
<u>TOTAL</u>	\$	<u>55.50</u>

## c. TOTAL COSTS: (Manhour costs and supply costs)

Manhour costs:	\$6,024.00
<u>Supply costs:</u>	<u>55.50</u>
<u>TOTAL</u>	<u>\$6,079.50</u>

14. Copies of the proposed instrument are attached.



DEPARTMENT OF THE AIR FORCE  
AIR UNIVERSITY  
AIR FORCE INSTITUTE OF TECHNOLOGY  
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6563

Appendix L: Questionnaire on Strategies and Tactics

16 May 86

LS (Major Johnstone/255-5435)

Negotiation Tactics and Strategies and  
Myers-Briggs Type Indicator

Survey Participant

1. Please take the time to complete the attached questionnaire and survey and return them to us in the enclosed envelope within the next two weeks.
2. The questionnaire records the strategies and tactics you use and prefer in your job when you negotiate contract price or terms and conditions. The survey instrument distinguishes various traits which have been correlated with temperament. The data we gather will become part of an AFIT research project to allow you and other Air Force negotiators to correlate how negotiators prefer to negotiate as a function of temperament type.
3. Please DO NOT record your name on the questionnaire or survey. The survey number assigned will be used for control purposes and the answers you give will not be attributed to you.
4. Please DO use a number 2 pencil to fill out the computerized answer sheet that accompanies the survey.
5. Your individual responses will be combined with others when the survey is completed.
6. The questionnaire and the survey have been reviewed and approved by HQ MPC/MPCYPS. Your participation is completely voluntary.
7. We certainly appreciate your help!

LARRY L. SMITH, Colonel, USAF  
Dean  
School of Systems and Logistics

- 4 ATCH
1. Questionnaire
  2. MBTI
  3. Answer Sheet
  4. Return Envelope

## Negotiating TACTICS and STRATEGIES Questionnaire

### Introduction and Instructions

This questionnaire is in two parts. Part I requests information about your education, training, experience, current job, organization and type of program. No information about your name, social security number, or other identifying data is requested; however, other "personal-type" data such as age, sex, and rank or pay grade are requested. This data will be used for conducting statistical analysis of the answers you provide to the questions in Part II.

Part II contains questions requesting you to indicate how often you use certain negotiating TACTICS and STRATEGIES in various contracting situations.

This questionnaire is designed to be completed with minimum time and effort. When you have completed the questionnaire, please use the attached postage-paid envelope to return it.

Please add any information or comments you wish on separate sheets and attach them to this questionnaire. We appreciate your participation in this survey.

## PART I--GENERAL INFORMATION

Please fill in the block or circle the letter indicating your answers to the following questions:

1. Age: \_\_\_\_\_ (to the nearest whole year)
2. Sex: a. Male      b. Female
3. Military rank or civilian grade: \_\_\_\_\_
4. Total number of years federal service: \_\_\_\_\_
5. Total number of years in contracting: \_\_\_\_\_
6. Please indicate the highest level of formal education you have attained: (circle appropriate letter).
  - a. High School graduate
  - b. College, non-degree
  - c. Bachelor's Degree
  - d. Graduate study, non-degree
  - e. Master's Degree
  - f. Master's Degree, plus additional hours
  - g. Doctorate Degree
7. How often do you negotiate contracts?
  - a. Primary duties (almost all the time)
  - b. Occasionally
  - c. Seldom (less than twice annually)
  - d. No longer conduct negotiations (primary duties are management oriented)
8. Current position title (buyer, PCO, Division Chief, etc.):  
\_\_\_\_\_



9. Primary contract negotiating responsibilities (negotiator, PCO, reviewer, price/cost analyst). That is, what role do you most often take when you negotiate?
- \_\_\_\_\_
10. Type of organization:
- a. Staff (policy, review committee, etc.)
  - b. Single system program office (such as B-1, F-16, etc.)
  - c. Laboratory
  - d. Multi-system program office (simulators, armaments, strategic systems, etc.)
  - e. Research and Development (R&D) only
  - f. Mission support (regional or local)
  - g. Other: \_\_\_\_\_ (write in)
11. Estimated total number of negotiations as the lead/ chief negotiator: \_\_\_\_\_
12. Estimated total number of negotiations you participated in as other than the lead negotiator: \_\_\_\_\_

## PART II--NEGOTIATING TACTICS AND STRATEGIES

The following questions ask you to identify and rank order various negotiating TACTICS and STRATEGIES. These TACTICS and STRATEGIES were selected from publications by Chester L. Karras, the National Contract Management Association's Negotiations Procedures and Strategies Training Manual, and other sources. While no two sources agree on all types of TACTICS or STRATEGIES, features of the approaches from these publications were combined. The following definitions are used in this questionnaire and are presented here to aid you in understanding the questions.

TACTIC: ANY SPECIFIC ACTION, WORDS, OR GESTURES DESIGNED TO ACHIEVE BOTH AN IMMEDIATE OBJECTIVE (such as countering an action by the other negotiating party) AND THE ULTIMATE OBJECTIVE OF A PARTICULAR STRATEGY.

STRATEGY: AN ORGANIZED PLAN OR APPROACH TO NEGOTIATIONS FROM AN OVERALL PERSPECTIVE WHICH MAY BE COMPRISED OF ONE OR MORE THAN ONE TACTIC.

Please feel free to write in and rank any TACTICS or STRATEGIES you use most often or most prefer but that are not listed. Also, please be as candid as possible in selecting or adding any TACTIC. No positive or negative connotations have been assigned to the TACTICS and STRATEGIES listed, and no such connotation will be attributed to those who complete this survey.

## PART II--SECTION ONE--NEGOTIATING TACTICS

The list below is a sample of negotiating TACTICS cited by several authors on the subject. First, please line through any terms you do not recognize. Next, rank (by appropriate letter(s)) the five TACTICS you use most often when negotiating, with #1 being the most frequent. Finally, rank the five TACTICS your negotiating opponents use most often. Write in and rank any TACTIC you have experienced or used that is not listed.

- |  |   |
|--|---|
| A. Adjust the thermostat                       | S. "Low-Ball" offers                          |
| B. Allow face-saving exits                     | T. Make an offer they must refuse             |
| C. Appeal to patriotism                        | U. Massage opponent's ego                     |
| D. Ask for lots of data                        | V. "Must be on contract by (date)!"           |
| E. "Belabor" Fair & Reasonable                 | W. "My plane leaves at (time) o'clock!"       |
| F. "Bogey"--constrained by Budget Limits       | X. Negotiate with limited authority           |
| G. Call frequent caucuses                      | Y. "Off-the-record" discussion                |
| H. Change negotiators                          | Z. Personal attack                            |
| I. Pick and choose the best deals              | AA. Play hard to get                          |
| J. Deadlock the negotiations                   | AB. Refer to the firm's past poor performance |
| K. Deliberately leave errors in offers         | AC. Refer to your side's generosity           |
| L. Deliberately expose notes or working papers | AD. Reverse auctioning                        |
| M. Embarrass your opponent                     | AE. "Split-the-difference" offers             |
| N. Escalate to opponent's boss                 | AF. "Take-it-or-leave-it"                     |
| O. Escalate to your boss                       | AG. Threaten to walk out                      |
| P. "Good-guy-bad-guy" roles                    |   |
| Q. "High-Ball" offers                          |   |
| R. Impose No-smoking rule                      |   |

## RANK      TACTIC YOU USE

#1	_____
#2	_____
#3	_____
#4	_____
#5	_____

## RANK      TACTIC OPPONENTS USE

#1	_____
#2	_____
#3	_____
#4	_____
#5	_____

## PART II--SECTION TWO--STRATEGY RANKINGS

The following are definitions of STRATEGIES selected for this survey.

#1. COMBINATION (THE "BIG POT"): Introducing many issues at one time, using "throw-away" points to get major concessions.

#2. COVERAGE ("BOTTOM-LINING"): Negotiating on total cost/price basis versus item-by-item.

#3. DEFINITE ACTION ("TESTING THE WATERS"): Taking a definite position forcing the opposition to either accept or reject your position.

#4. LIMITS: Using authority, time, budget, or other limits to pressure concessions from the opposition.

#5. PARTICIPATION/INVOLVEMENT: Designing the team composition to narrow or broaden the areas of negotiation (use of experts, for example).

#6. PATIENCE ("BUYING TIME OR STALLING"): Using delay TACTICS to prolong consideration of an issue or to counter a time limit STRATEGY.

#7. SURPRISE: Any unexpected action to gain acceptance of a point or obtain concessions from the opposition.

#8. REVERSAL ("THE LESSER OF EVILS"): Presenting increasingly more rigid demands forcing the opposition to accept a lesser (preceding or following) offer--your true objective.

#9. STATISTICS: ("FIGURES DON'T LIE"): Using learning curves, trend analysis, or historical records as the primary support for your position.

#10. STEP-BY-STEP: Presenting a series of acceptable minor points to obtain a major concession; also used to counter "The Bottom Line" STRATEGY.

Please rank the STRATEGIES (defined on the previous page) by placing a number next to the STRATEGIES under the columns "FREQUENCY" and "PREFERENCE". The number one (1) would indicate the most frequently used or preferred STRATEGY, and the number ten (10) the least frequently used or preferred. Remember if you use or prefer a STRATEGY not listed, please describe and rank it. Your input will be valuable in broadening the database of this survey.

	<u>STRATEGY</u>	<u>FREQUENCY</u>	<u>PREFERENCE</u>
#1	COMBINATION	_____	_____
#2	COVERAGE	_____	_____
#3	DEFINITE ACTION	_____	_____
#4	LIMITS	_____	_____
#5	PARTICIPATION	_____	_____
#6	PATIENCE	_____	_____
#7	SURPRISE	_____	_____
#8	REVERSAL	_____	_____
#9	STATISTICS	_____	_____
#10	STEP-BY-STEP	_____	_____
	OTHERS (Please write in & rank)	_____	_____
		_____	_____
		_____	_____
		_____	_____
		_____	_____

## PART II--SECTION THREE

## STRATEGY RANKINGS UNDER VARIOUS CONTRACT SITUATIONS

For each of the following situations please indicate the STRATEGY (from page 7) you most prefer to use. Your preference may be based on which one you believe is most effective or the one you are most comfortable using. If you have no preference, then please so indicate by writing "NP" on the line next to the situation. If you have no experience with a particular situation, then please so indicate by writing "NE" on the corresponding line. Assume that the situation presented is the primary determining factor in your choice. The situations are: Contract Type, Contract Dollar Value, Type of Contractual Action, Type of Acquisition or Program, and the Degree of Competition.

REMEMBER--INDICATE YOUR MOST PREFERRED STRATEGY

<u>SITUATION</u>	<u>STRATEGY</u>
<u>#1 - CONTRACT TYPE</u>	
FIRM FIXED PRICE	_____
FIXED PRICE INCENTIVE	_____
COST PLUS FIXED FEE	_____
COST PLUS INCENTIVE FEE	_____
COST PLUS AWARD FEE	_____
<u>#2 - CONTRACT DOLLAR VALUE</u>	
<u>FROM</u> <u>TO</u>	
0                              25,000	_____
25,000                      100,000	_____
100,000                      1,000,000	_____
1,000,000                      10,000,000	_____
10,000,000                      25,000,000	_____
OVER      \$25,000,000	_____

REMEMBER--INDICATE YOUR MOST PREFERRED STRATEGY

<u>SITUATION</u>	<u>STRATEGY</u>
<u>#3 - TYPE OF CONTRACTUAL ACTION</u>	
NEW CONTRACT	_____
CONTRACT MODIFICATION (ECP, ADDED WORK, ETC.)	_____
TERMINATION - SETTLEMENT OF CLAIMS - CLOSE-OUT	_____
OTHER (Please specify)	_____
<u>#4 - TYPE OF ACQUISITION OR PROGRAM</u>	
RESEARCH AND DEVELOPMENT	_____
PRODUCTION	_____
OTHER (Please indicate)	_____
<u>#5 - DEGREE OF COMPETITION</u>	
THREE OR MORE COMPETING CONTRACTORS	_____
TWO COMPETING CONTRACTORS	_____
SOLE SOURCE CONTRACTOR NEGOTIATIONS	_____

END OF QUESTIONNAIRE

Thank you for completing this questionnaire. We really appreciate your participation in this survey. Your responses are valuable additions to the knowledge base of contract negotiating TACTICS and STRATEGIES.

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→ This study identified the psychological types of contract negotiators and determined whether their preferences for negotiating strategies and tactics, and their perceptions of contractors' tactics, were correlated with their psychological types. From May through July 1986, the Myers-Briggs Type Indicator (MBTI) and a questionnaire asking for rankings of pre-selected negotiating strategies and tactics, and frequency rankings of contractors' tactics, were administered to contracting officers and price analysts assigned to ~~Air Force Systems Command/Aeronautical Systems Division, Wright-Patterson AFB, Ohio~~. Ninety-nine useful responses from 69 males and 30 females were received. The MBTI results were paired with responses to the questionnaire and the results were analyzed using SPSSx subprograms to conduct chi-square, coefficient of concordance (Kendall W) and correlation (Kendall tau) tests on the data. The MBTI results showed the sample's type distribution was statistically different from the type distribution in the general population. The most frequent type was ISTJ (38.4%), followed by ESTJ (20.2%), and ENTJ (8.1%). → The males showed significant overrepresentation of introversion, sensing, thinking and judging types. The females were significantly overrepresented in thinking types. Significant decrements were noted in types ENFP, ENTJ, ESFJ, ENFJ, ESTP and ESFP. No statistically significant correlation was found between psychological types and preferences for strategies or tactics, or perceptions of contractors' tactics. → This may have been the result of the questionnaire, which offered only competitive (win-lose) alternatives to survey participants, thus the range of choices required to detect natural differences as a function of typology was not available for respondents to select. Other possible explanations are the strict legal and regulatory environment in which contract negotiations are conducted and the influence of organizational norms.

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